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ECONOMIC GROWTH: BRAZIL, INDIA, JAPAN

Edited by

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JOSEPH J. SPENGLER



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Foreword

I

THIS VOLUME of papers bearing upon several aspects of the economic growth of Brazil, India, and Japan is the product of a research conference planned by the Committee on Economic Growth of the Social Science Research Council beginning in 1950, and held under its auspices in the spring of 1952.

The aspects of growth to be stressed, the countries whose economic development would be reviewed, and the conference method of handling the topic were chosen after careful deliberation. Discussions in the Committee took cognizance from the very beginning of the wide ramifications of the field of economic growth; interest centered not only on measurement but also on the treatment of the immediate and the more deeply seated determining factors—even though the historical frame of reference was limited to the last two centuries. The obvious problem of interrelation among the several aspects of economic growth having been recognized, it seemed that an experimental attack on the treatment of at least some of these aspects for several countries should be fruitful, if only in revealing more specifically the difficulties that were likely to be encountered. The Committee therefore decided that among its earliest efforts would be an attempt to treat selected aspects of economic growth for each of several countries—with the general query in mind whether and how comparable and testable results could be secured.

The choice among the aspects to be emphasized was, in some respects, obvious. Clearly, the substance and results of economic growth proper, the changes in aggregate output, in industrial structure, in accumulation of capital, had to be reviewed. These economic trends are the subject matter of papers assembled in Part I of the volume. Equally clearly, trends in population, the carrier and the touchstone of economic growth, had to be studied in the aggregate and in its significant components. This aspect forms the topic of the papers in Part II of the volume. Three other

aspects were distinguished: the trends in form of business organization, with particular emphasis on the role of the entrepreneur; the state and its role in economic growth; and the social structure, the class and other groupings of society that might serve to inhibit, permit, or foster economic development. The papers that could be secured on these topics—and the coverage is far from complete—are assembled in Part III.

The choice of countries, while guided by some substantive criteria, had to be even more of a compromise than the choice of aspects to be emphasized, although, as will be clear, there was a strong element of practical expediency in the choice of the latter also. The Committee naturally desired to focus attention, at least in the first experiment, upon countries other than those already familiar to the group of scholars whom it represented, i.e., other than the industrially advanced countries of the Western European civilization. It also wished to deal with countries whose historical development, because of their size, could be understood without too close reference to other, larger units within whose orbit they would otherwise be. Furthermore, it wished to find countries in different corners of the earth, reflecting a variety of historical, cultural, and natural heritage. But above all, within the limitations set up by these substantive criteria, we had to choose countries whose economic and social history formed the field of special study of a number of scholars in this country who, it could be hoped, might be sufficiently interested to contribute actively to the summary and analysis of the several aspects of economic growth. All these criteria do not make the choice of Brazil, India, and Japan the only necessary outcome; but they may go far to explain it.

The basic decision to deal with the topic by means of a co-operative effort, in which a number of scholars already actively engaged in the field would be asked to contribute papers on the several aspects for the selected countries, was again a reflection of considerations partly of methodology, partly of expediency. The project was a tentative experiment in the sense that no assurance was felt by the Committee that this topic in its specific formulation represented the most effective way of initiating research or advancing knowledge in the field. The very vastness of the field and its relatively chaotic state would preclude any solid judgment as to what are the major remediable gaps in it, what the particularly fruitful directions of research. Such a judgment could perhaps be made only after a critical and thorough survey of the literature pertaining to the subject—an effort that would itself take some years and could be undertaken only by an individual scholar or a small group of scholars on a full-time basis. Such a project was beyond feasibility as far as the Committee was concerned; and it could therefore make decisions and choices of only a limited and tentative character. In implementing one of such decisions, whose eventual tangible product is represented by this volume, the co-operative effort of many scholars, each contributing significantly but without a major expenditure of time and effort, seemed the only practicable procedure. Par-

ticularly, where several countries had to be covered and several aspects of economic growth emphasized in the treatment, the necessity of pooling the already existing competence and interests of a fair number of scholars in various disciplines and with different area specializations was evident. It is for this reason that the Committee decided to handle the topic by means of a research conference—recognizing in advance not only the advantages but also the possible limitations of the procedure.

II

A brief description of the organization of the conference may prove useful, if only in assisting the reader to understand better the products assembled here. The basic choice of the topic, the countries, and the procedure was made by the Committee; but once the decision had been made, the Committee felt that it did not possess the specific knowledge of these particular fields to be able to make the proper decisions alone. It therefore entrusted responsibility for choice of prospective authors of papers, and panel discussants, to three planning groups: one in charge of the papers for Brazil (Charles Wagley, Chairman; Preston James; Robert S. Smith); a second in charge of the papers for India (Morris E. Opler, Chairman; Kingsley Davis; Daniel Thorner); and the third in charge of the papers for Japan (William W. Lockwood, Chairman; Edwin O. Reischauer; Irene B. Taeuber; Robert E. Ward). These three planning groups reported back to the Committee, and the chairmen of these groups participated with the Committee in all major decisions concerning the conference. It is to the expert knowledge of these planning groups, as well as to the effective contributions of the scholars whose papers appear below, that whatever success the experiment had is due.

The papers prepared for the conference were obtained in advance of the meeting proper, and distributed—first to panel discussants and then to all participants in the meeting. Even the panel discussants were asked to submit their comments in writing sufficiently early to permit circulation in advance. An effort was thus made to reserve the limited time at the meeting to discussion, from the vantage point of familiarity by all participants with both the papers and the comments by the panel discussants. Finally, the division by countries that had been followed in organizing the planning groups was deliberately abandoned in preparations for the meeting. Each of the five sessions was devoted to a single or pair of topics: economic trends; population movements; business organization and the entrepreneur; social structure and the state; and an over-all summary. The three editors of this volume (Wilbert E. Moore, Joseph J. Spengler, and Simon Kuznets) served as chairmen of most of the sessions; parts of their introductory essays below reflect both their statements at the meeting and some of the discussion that developed there. In short, an effort was made in the mechanics of organization to cross the boundary lines of the countries and of the disciplines within whose limits the several aspects

lay—limited as such an attempt could have been, given the disciplinary roots and area specialization of the active participants and the short period of collaboration involved.

The decision to publish the product of the research conference was reached, after the meeting was held, by the Committee in consultation with the chairmen of the three planning groups; and agreed upon, subject to several specifications. First, in order to avoid diffusion of argument, it was decided to publish such papers as had been approved by the editors, but not the discussion. The hope was that, in revising the papers, the authors would take advantage of whatever written or oral comments seemed to them germane and acceptable. Second, the authors would be given adequate time for revision of their papers, in the light of comments, editorial suggestions, and second and third thoughts—a circumstance that explains the delay of over a year in the submission of the volume to press after the meeting proper. Third, the papers in the volume would be grouped by the several aspects of economic growth rather than by countries—to emphasize the comparative elements in the discussions and minimize the concentration on specific countries. Fourth, the three editors were asked to prepare general essays to serve as introductions to each of the three groups of papers for the editing of which each had particular responsibility (although there was naturally an interchange of editorial comments among all three). The purpose of these essays was largely to suggest the broader problems, paint the broader framework within which the stimulating contributions of the individual papers could be most clearly seen.

III

The research conference described above and its product in this volume, like all human efforts, fall short of expectations. That there is an inevitable element about this outcome, that expectations must necessarily be set and are usually set above probable realization, need not deter us from a brief effort to indicate here the sources of whatever partial failure can be recognized.

One should note first that the choice of the three countries having been made, the Committee and the planning groups recognized at the outset some limitations, some aspects of economic growth that should have been emphasized and were not—for reasons of practical expediency. To illustrate: We recognized the importance of the ideological superstructure of the whole set of values in society, and assumed that an analysis of the latter for each of the three countries would be quite illuminating. But we were not sanguine enough to hope to be able to find scholars sufficiently conversant with these aspects to be ready to contribute; and we were particularly concerned about the possibility of establishing intellectual rapport between such scholars, if they could be found, and those interested in the more tangible and technical aspects of economic growth. This

may have been an error of timidity, although the difficulties encountered in handling some of the better-studied aspects of economic growth suggest that the original limitation was probably wise. Whatever the judgment, it should be stressed that the several aspects of economic growth emphasized here far from exhaust the important aspects of the process; that even if all of the originally planned topics were adequately covered, there would still have been many links missing—particularly in the area of interplay between cultural and economic factors.

Perhaps more important is the partial failure in the treatment even of aspects which, according to the plan, should have been emphasized and thoroughly covered. The main reason, of course, lies in the enormous difficulties in the way of securing a proper view, with adequate historical perspective and analytical depth, for the several countries chosen. It is hardly possible to consider here the reasons for these difficulties; but it is relevant that the limitations of individual scholars, and we are all limited and fallible, play but a minor part. The truth of the matter is that the application of minimum critical standards reveals serious gaps in basic, long-term information and analysis—quantitative and qualitative—even for a country as well-studied as the United States. The difficulties in the case of Brazil, India, and Japan are far greater; even a hasty reading of the papers that follow will suggest their magnitude. We have clear evidence of it not only in the papers that are published here, in which the authors recognize the difficulties and the limitations imposed by them—despite all ingenuity and effort. They are also evidenced by the withdrawal from publication of two papers by their authors because they felt that the data that had to be used could not withstand critical scrutiny.

Under these conditions the attempt to deal more directly with questions of comparability and general methodological problems had to be limited to the kind of tentative explorations contained in the introductory essays by the three editors. The attentive reader will soon discover that the particular experience and interest of the several authors and editors still affect the distribution of emphasis among alternative views taken, either of the economic growth of the specific countries or of the problems that they deemed important to emphasize in the study of economic growth of nations at large. There are still questions as to how the qualitative information concerning such aspects of growth as the state, the social institutions, and the entrepreneur can be combined with such measurable aspects as the quantitative trends in output and its components or in population and its subgroups. Granted that one could hardly expect these fundamental questions of the relation among various disciplinary approaches and of historical methodology to be resolved by limited experiments of the type under discussion, it is only proper to indicate the limited nature of the advance made here toward a further resolution of these questions in their bearing upon the study of economic growth.

Of course, the limitations, the failures of the experiment thus indi-

cated are in part a corollary of the conference procedure—which must largely rely on what is available in the way of already existing experience and interests. Abstractly, it might have been possible to go further by a substantive project lasting for years in which the time and effort of a group of skilled investigators might have triumphed sufficiently over the inadequacies of data, poverty of accumulated analysis, and the diffusion of disciplinary interest, to produce more consistent and unified results; and contribute more to an indication of how an integrated analysis of the several aspects of economic growth could be fruitfully undertaken. But whether, even granted the means and particularly the intellectual resources for it, such a concentration of effort upon this particular topic would have been good research strategy, was not a practicable question before the Committee. Even if it were, the answer might well have been that the conference procedure provided a highly effective method of preliminary reconnaissance and should be tried first.

The strictures above should not mislead us in failing to recognize the interest and value of the papers that follow. Considering the difficulties of securing testable knowledge of economic growth of the countries far outside the orbit of Western European civilization, the paucity of basic data, the lack of a body of analytical research built up in the past, either within these countries or outside, one can be heartened rather than discouraged by the suggestive richness of the discussion; the wealth of statistical and qualitative information; and the glimpses of valuable hypotheses and questions provided in the papers. Nor should one overlook the value of bringing together the results of what otherwise are separate disciplines, and of the questions which are necessarily posed thereby for the stimulation of scholars in cognate fields.

That the Committee recognizes the value of the papers prepared in connection with the conference is, of course, acknowledged by its decision to publish them. Furthermore, the need for the specific contribution of more sustained substantive research admitted, the Committee continues to view the research-conference procedure as a valuable device for exploring aspects of economic growth where, for lack of prior sustained work, the field is not ready for substantial, long-term research; or for dealing with aspects that require the collaboration of many scholars and several disciplines, collaboration that cannot be practicably secured in long-term efforts, and should anyway be attempted first on the more modest scale of a well planned, but *ad hoc* conference. Co-operative effort of this type can be hoped to further knowledge, to contribute something new only a short notch in advance of what is already known. But it can be extremely effective in spreading what is already known, in precipitating it in forms in which it becomes accessible outside of the discipline of origin. In a diffuse field such as that of economic growth, such a function, as well as any even modest advance of knowledge, is to be highly valued.

Viewed in these more reasonable terms, rather than in the more sanguine ones of untested expectations, the contribution of this volume looms large indeed. The Committee has a feeling of pride in presenting it to a wider audience and of deep gratitude to those who have helped to make it possible.

SIMON KUZNETS, *Chairman,*
Committee on Economic Growth.

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PART ONE

AGRICULTURAL, INDUSTRIAL,
AND RELATED
TRENDS

Problems in Comparisons of Economic Trends

SIMON KUZNETS · JOHNS HOPKINS UNIVERSITY

INTRODUCTION

COMPARISONS OF economic growth are beset with difficulties: the most important arise out of the paradoxical structure of this intellectual operation. Comparison requires reduction to a common denominator. In the case of economic growth, unlike that of short-term changes, movements over time often involve structural shifts and qualitative transformation of society; and differences in space are tied in with radical differences in cultural and social heritage. In essence, we are, therefore, trying to compare the noncomparable. Yet we must; and we do so by imposing common yardsticks upon diverse societies. We thus act in the belief that either the basic purposes are the same for all these societies; or, if not, that a yardstick clearly related to some recognized set of purposes, presumably one that makes economic growth important, will permit the recording of results of the process and supply information that can be used for a valid analysis of determining factors.

By thus recognizing the source of the major difficulties, we can trace the implications for more specific problems; and particularly, see these problems in perspective. The comments below are intended to bring to the surface some of these specific difficulties. A problem properly formulated is not necessarily half-solved, even disregarding the question of what good a half solution is if the other half is forever lacking. But there is a chance that a difficulty viewed in proper perspective will be seen to be either insoluble or soluble by recognizable means.

The papers in this part, which deal with growth trends in total product, agriculture, industry, and capital formation in Brazil, India, and Japan, over the last half to three-quarters of a century, can provide only illustrations, rather than an adequate basis for statements that claim generality. They do not exhaust, or claim to exhaust, the variety of economic-growth experience even in these three countries, let alone in the world at large. But they do serve to widen the horizon sufficiently so that questions that

tend to be overlooked in studies emphasizing a single country, or confined to mechanical comparisons of aggregates for several countries, emerge to claim adequate attention. The choice of the questions to be discussed below naturally reflects one individual's judgment, stirred by the contributions of the papers. They will have served their purpose if they provoke in the reader closer attention to the problems discussed in this volume and suggest other points whose recognition may lead to more fruitful research in the field.

Two additional minor comments may prevent misunderstanding. First, most and probably all the ideas touched upon below have been expressed in some form in past writings of other scholars; this wide topic of the growth and decay of nations has been the subject of analysis and musing by so many minds that any chance of originality is dependent upon some significant addition to empirical knowledge—and what follows is clearly not a report on a new body of empirical evidence. To document the discussion with numerous appropriate references was, however, a task that I was reluctant to undertake; the effort involved did not seem warranted by the possible increase in the effectiveness of the discussion. The omission of footnotes in the text that follows should therefore be taken as evidence not of pristine originality of the thoughts expressed but, on the contrary, of their origin in many sources.

Second, many aspects of the discussion are substantially the same for the underdeveloped country of today and for the underdeveloped phase, fifty or a hundred years ago, of a currently highly developed country. Wherever the distinction was not germane to the argument I used, for simplicity's sake, the term "underdeveloped countries" to refer both to those existing today and the past phases of currently developed nations.

THE UNIT OF OBSERVATION

Economic growth of mankind can be studied for a variety of units of observation. Families, firms, industries, cities, regions, nations, religious groups come easily to mind; some of these have actually been used in empirical study, and seem relevant. One can think of many other ways of grouping mankind: by the color of their hair, by the type of their blood, by the elevation from sea level of their habitat, or by the rules of consanguinity governing their marriages. That it does not occur to us to use these groupings in the study of economic growth indicates that we do not believe them to be relevant. Conversely, the groupings that we do employ are used presumably because they classify mankind by characteristics that, in some way, are related to economic growth—in the sense that somehow they spell differences in determinants and thus perhaps (though not necessarily) in results. Since the unit of observation must be chosen before data can be collected and organized, it follows that some crude theory of determinants of economic growth is antecedent to observation.

Thus, we tend to think of the economic growth of Brazil, India, Japan, and other countries, rather than of blue-eyed, black-eyed, brown-eyed, etc. people, because Brazil, India, Japan, etc. stand for communities endowed with distinctive characteristics important to the process. Attachment to a given, relatively fixed, area, with its complex of natural conditions and resources; a heritage of social patterns, due to a common past; a set of social institutions capable of effective and independent secular decisions are the characteristics that we find in these units, and in practically no others. And it is they that explain why analysis of and the supply of data on economic growth are organized about units we call countries, nations, states, and the like—at least for recent centuries, although for earlier times other units may seem more appropriate.

So much is obvious. What is perhaps less obvious is that the characteristics suggested must be crystallized into formal assumptions if the measurement and analysis of economic growth is to have much meaning. Thus, we must assume that the unit has been relatively fixed over time, has preserved its identity long enough for the process of long-term growth to be possible. If the Brazil of 1850 is not that of 1950, if these are two entirely different units, it is impossible to speak of economic growth from 1850 to 1950 as a process relating to something called Brazil. This assumed fixity over time is obviously a formalization of actual conditions. Brazil does have a core of area and natural conditions and resources that have been fixed for decades, if not centuries; a stock of common past that changes but slowly; and social institutions that make for continuity—as do India and Japan also. But, in fact, all of these do change; and it is not surprising to find weary or careful investigators worrying whether they are dealing with a unit sufficiently fixed to permit observation of economic growth. Such concern may or may not be justified. The important point here is that fixity or continuity *must* be assumed if a process of growth or continuous movement rather than a succession of distinct and unrelated changes is to be recognized.

Second, the unit *must* imply the existence of different parts, different with respect to *economic* characteristics and factors relevant to the process of economic growth. The “must” is due to the fact that the unit has been selected for the fixity and continuity of its natural conditions, historical heritage, and decision-making social institutions. But groups with these characteristics are, at least during recent centuries, mostly large enough each to comprise a variety of economic activities, of economic-interest groups—in short, of elements that are different relative to the process of economic growth. Indeed, it is this differentiation of parts, related with each other by competition and co-operation within a country’s economy, that makes for the intellectual complexity of the problem of economic growth of these units—as it does for the problem of countrywide economic cycles: growth and decay, or cycles, in a narrowly defined single industry present a much simpler problem. The important

corollary, however, is that by the nature of the case, inequalities in the rate and level of growth will be found within each country unit. Economic development of Brazil, India, Japan, etc. means, therefore, necessarily unequal growth of parts within each. This does not render aggregative single measures for each country wrong; they are only incomplete. Above all, evidence that at any given time conditions in several parts of a country are different is no ground for claiming that the growth of the country as a whole cannot be discussed. This diversity is a necessary part of, not a contradiction to, the process of growth of units like Brazil, India, etc., whose very continuity as social aggregates permits differential growth of their economic parts.

Yet on this point of unity in diversity we are in the dark, and further exploration may contribute much illumination. Integration of diverse parts has been one important feature of economic growth in recent times—in that the more advanced the country, the denser its communication network and the closer the relations among the several parts (whether they are areas, classes, etc.). True, even in a highly developed country like the U.S.A., one can find enclaves that have benefited little from the country's advance, e.g., the Indians on their reservations and the mountaineers in the Ozark hills. Yet these are tiny enclaves that may be disregarded. But in a country like India, has the interrelation among the several areas been close enough for us to talk of an economic community and its growth as a unit? Why should we group our observations around India as a whole, rather than consider separately each province—Bombay, Madras, Bengal, etc.? The obvious answer is the existence of a common historical past and culture, and, in part, of a common government. But the implication of this obvious answer is that, because of the common background that differentiates India from the rest of the world, because of whatever cultural and historical unity there is, there is also *potential* economic unity of the type attained in the later phases of growth associated with an industrial system. In other words, we treat India as a whole not so much for whatever economic unity it has now—it may still be a congeries of not too closely related economic parts—but because its cultural unity means a potential economic unity to be realized in the process of growth. It follows that in any adequate study of economic growth, whether in underdeveloped or developed countries, particular attention must be paid to the emergence of those institutional and technological ties that translate existing cultural and historical unity into close economic unity at higher levels of economic performance—the latter partly a consequence, partly a further cause of the processes of closer economic integration.

Third, the unit *must* imply capacity for independent long-term decision. Otherwise it would have to be viewed as part of another, wider whole which is at the deciding level. This statement assumes that the countries for which we observe economic growth are the proper units

because it is within them that the decisions are made that set the conditions of economic growth—those concerning land tenure, property rights, industrial protection, public works, education, rights of labor, etc. This independence in turn is traceable to the differentiation caused by diverse historical and natural conditions, which in the last count determine the separation of one country, state, nation, etc. from another.

The difficulty with this criterion is that it *cannot* mean complete independence of economic and other ties. All countries or nations are parts of mankind; all are bound together by a vast network of relations, pacific and hostile, overt and hidden. In some cases these ties are so strong that one can easily understand the difficulties facing investigators who try to explain the process of economic growth. Can the growth of India, Brazil, and Japan be really understood if they are treated as independent units, rather than as members of a concert of nations? How should one view the growth of India during its colonial days—as part of the British Empire or as a separate and relatively independent unit, in which colonial status is a major qualification, but a qualification nevertheless? What about the dependence of Brazil and Japan on world markets? Or the whole milieu of world history with its often intangible elements that have nevertheless far-reaching influence on purely economic matters?

Here the question permits alternative answers, depending upon the weight attached by the investigators to internal and external factors for a given country, nation, etc. Most investigators would draw some minimum line. They would, for example, refuse to treat Luxembourg, Monaco, and Andorra as independent units whose economic growth can be studied, and for which an attempt to compile observations would be very useful (as distinct from using data provided by historical accident). Some investigators would go further and group some larger states into broader entities. On the other hand, some would insist that the utmost separation be preserved, at least in the initial stages of observation and data organization. The important point, however, is that *whatever* the answer, the practical demands of empirical study and of what one might call intellectual feasibility require that lines of distinction be drawn, distinguishing units which at least provisionally must be treated as independent. In other words, there is no escape, at the stage of observation, from drawing lines which theoretically do violence to the interdependence of all human societies in a limited universe.

Given the need for observing economic growth for historically determined, relatively fixed units treated separately, and each containing a variety of diverse elements, it is clear that the use of such units of observation—countries, states, or nations—will accentuate the differences in the rate and structure of economic growth. It will do so because the units have been selected with respect to their differentiation by natural and historical factors which are presumed to influence economic growth. If, nevertheless, they can be reduced to a common denominator and generally

observed features can be found, there must obviously be some supranational, supracountry elements in the situation. In the economic sphere these elements lie in the common structure of material needs of human beings—assignable in turn to their common characteristics as members of the human species; in the common possession of institutional and technological experience, theoretically available to all and borrowable by all; and in the continuous interaction among these units, in peace and in war. It is these common elements that lend meaning to the application of common yardsticks in gauging economic growth and lead to the expectation that the obvious diversities, when seen against the common background, will permit insight into the more specific determinants. Our interest in Brazil, India, and Japan is not only in them as distinct individual societies but also in them as societies of human beings with needs and ways of surviving and expanding similar to those of others in the world; societies operating during historical periods in which the stock of social and technical experience common to mankind was also available to them; and societies which were in constant interaction with others.

The critical reader will have already observed how, in the discussion above, each apparently insoluble antinomy was arbitrarily resolved to provide the basis for analysis and observation of economic growth. Fixity in mutability; unity in diversity; independence in interaction; and a common base in differentiation—all had to be assumed. These are all prerequisites of a comparative empirical study, and they must be formulated, however reasonably, as assumptions not subject to advance proof. Their test lies eventually in the validity and relevance of the results of the study based upon them.

THE PROBLEM OF MEASURABILITY

The papers in Part I reveal the contrast between the relative abundance of statistical data for Japan and their scarcity for Brazil and particularly for India, a contrast which with some modifications is also reflected in the papers on population trends in Part II. While these differences may in part be due to the historical accident of choice and willingness of scholars in this country familiar and competent to deal with the statistics for these three countries, the contrast nevertheless illustrates the obvious bias in the supply of statistical data for measurement of economic growth. Such data are most abundant for the industrially developed countries (although in recent decades reliable data for countries that need iron curtains have also been scarce) and least for the underdeveloped countries. Since it is in the latter that problems of economic growth are most acute and thus the need for long-term data to guide decisions perhaps greatest, there is an inverse correlation between the supply of statistical data and the urgency of the need for them.

Ironical as this correlation may be, it is neither a surprise nor a caprice of fate. On the contrary it is a reflection of deep-seated charac-

teristics of the societies and economies involved. Obviously, the countries less advanced industrially often have no resources to spare for the collection and analysis of data, which, in the short run, satisfy a less pressing need than food and shelter for the population. But more fundamentally, the social and economic life is such that the active agents are neither forced nor able to use overt, systematized quantitative records—the only proper foundation for reliable statistics and without which even strenuous efforts from the top to secure data may prove fruitless. Economic agents living in a society in which there is no pressure toward consulting the hour, the day, and the month of the year; in which there is such a close relation between production and consumption that little of the output appears on the market and is evaluated in quantitative terms; in which units of weight, volume, etc. vary from locality to locality and are none too firmly fixed in any, can hardly be expected to account for their operations in specific and comparable numbers; nor would an attempt to have them do so at the behest of some central authority be likely to yield usable results. Where social and economic life does not produce numbers in the course of everyday life, the measurement of any wide aggregates presents a particularly difficult task. And whatever scanty results are produced must be examined carefully to see whether the concepts employed have not been made too sharp, too rigid, too uniform, relative to the heterogeneity and fluidity of the life that they are intended to reflect.

These comments apply not only to the underdeveloped societies of today, but to the earlier phases of the presently developed countries. They clearly suggest a limitation to the belief that a consistent quantitative record of the process of economic growth that will cover all important phases can be established. Yet the process of growth is essentially quantitative; it implies certain types of changes over time, even though these must be studied not only for the aggregates but also for components involved in the structural shifts. Do the preceding comments mean that relatively complete coverage of the sequential phases of economic growth in the recent century and a half to two centuries is impossible? Are we doomed to a completely skewed quantitative basis for analysis, in which only the later, more advanced phases can be studied because statistical ignorance shrouds the earlier phases in the advanced countries and the current phases in the underdeveloped countries?

That I am inclined to answer “no” to these questions may be attributed to the inveterate optimism of a worker in empirical research, to a natural occupational myopia without which the complexity and difficulties of the problem too clearly foreseen would kill any work from the start. But such predilections aside, one can legitimately argue that, as a matter of fact, relatively little effort has been devoted to the task of overcoming the difficulties just suggested. Because of the pull exercised by current problems, an overwhelming proportion of whatever talent is available in the field of quantitative research in economics has been devoted to recent

periods in the native countries of most scholars, i.e., the developed countries. A brief glance at the field by anyone at all familiar with statistical research in economics will show that even in the developed countries, studies covering a period long enough to reach back to the early phases of economic growth have been so rare as to constitute curiosities; and these studies, like those by native scholars of currently underdeveloped countries, almost never provide adequate historical perspective. My strong impression (for lack of complete familiarity with the literature, it can be only an impression) is that no consistent and technically sophisticated attempts to deal with the statistical trends in the underdeveloped countries, or in the earlier phases of developed countries, no attempts to deal with the statistical skeleton of economic growth, have been made. The only notable exception in recent years is the compilatory work of Colin Clark, which is subject to many limitations—most of them because it is a single-handed effort by a scholar familiar chiefly with sources in the English language alone—a comment that is not meant to detract from the stimulus and value of Clark's contribution. The point is that we need much more work in this direction; and if the work is guided by a clear realization of what is needed for study of economic growth, by a refusal to be overimpressed with some of the finer technicalities of recent economic measurement, and by some imagination in adapting the meager data available to the construction of a proper statistical framework, valuable contributions and a flood of light on phases and countries now shrouded in ignorance may well result.

The exercise of imagination and skill in relating data to the basic tasks of the study seems to me particularly worth stressing. The attempts, all too frequent in recent years, to fit the scanty data of many underdeveloped countries into strait jackets of elaborate social accounts proliferated in the developed countries, have proved useful in that they indicated how little we know—if that is the lesson which the compilers and users draw. But would it not be more fruitful, in the longer run, to admit that only some of the aspects of economic life in underdeveloped countries, or in the earlier phases of developed ones, are measurable; and to attempt to measure them in such a way as to secure a reasonable portrayal of basic levels and trends? To illustrate, if we find that in earlier phases even in the U.S.A. and in many countries today, only income embodied in commodities can be at all approximated, let us measure this part as inclusively as we can and not manufacture out of whole straw estimates of income arising in services. If for many countries all we can get over a long period are some data on total population, imports and exports, and agricultural production, let us by dint of comparative analysis use these few but important items of quantitative information in such a way as to get at least some notion of the rate of long-term movement of real product, total and per capita. For purposes of analysis and discussion even of current problems, a picture of long-term trends thus secured is worth a thousandfold more than an elaborate set of social accounts or of input-output tables for a single year

or two. The papers on Brazil, and particularly the one on Japan, shed much light on the earlier phases of industrialization; and we need many more such studies, for a variety of countries and phases.

These comments stem from a belief that there is an urgent need to redress the imbalance in the distribution of technical-statistical resources between the elaboration of the present and the neglect of the longer-term past. For the study of economic growth, our gap in knowledge of earlier phases of development of presently developed countries and of the longer-term movements in the recent past of underdeveloped countries is particularly crippling. It is crippling since lack of such information inhibits adequate analysis of crucial phases in recent economic growth—mainly the phases of transition from a preindustrial to an industrial economy. It is limiting in any serious consideration of policy problems of development for presently underdeveloped countries, since no sound basis exists for evaluating either the earlier transition experience of the developed countries or for testing the results of such an evaluation in terms of the recent past of the underdeveloped country itself.

TOTAL AND PER-CAPITA PRODUCT

No matter how we qualify the validity of single-value measures of economic growth, there will always be a natural urge to reduce this complex process to a single index so that comparisons of levels and rates over time and across space can be made easily. The recent widespread practice—in the writings of Colin Clark, Joseph Spengler, and in the reports of international agencies—has been to use national product per capita, per worker, per man-hour. It would be out of place to deal here with different variants of this ratio, either of its numerator—the national product, or of its denominator—population as a body of producers or consumers or of both. But in considering some general problems of quantitative comparisons of economic growth, one may ask whether, if single indexes are to be used, movements that we call economic growth should be measured by per capita, per worker, or some other per unit ratio rather than by the unreduced total volume of national product.

The advantages of such per-unit measures, which can be readily cited, explain their widespread use. Reduction of the total to a per-capita or per-consumer basis provides some idea, however crude, of the adequacy of performance of the economic system in satisfying human needs; and the stagnation of a per capita at a low level is a much clearer indication of acute policy problems of failure of development, or of retrogression, than is the movement of an unreduced total. Also, reduction of the national total to a per-worker or per-man-hour basis reveals long-term trends in productivity and directs attention to some causal factors that may have determined either economic growth or economic stagnation. One may argue further that only when the per-unit measures, rather than the unreduced totals, display significant long-term trends are such trends accompanied

by structural changes—in distribution among various industries, in the apportionment between consumption and capital formation, in the roles of domestic and foreign factors, and the like which constitute the substance of the process of economic growth to be further observed and analyzed. If only the unreduced totals show long-term movements, whereas the per-capita or per-worker levels are relatively constant, the structure of the economy is not likely to change much; and one should in that case talk about extensive expansion rather than growth, since growth has a more specific meaning calling for some substantial structural shifts.

All these arguments are freely admitted, much as one may quarrel with the specific formulation of some. Yet there is an important sense in which total unreduced product is a much safer single measure for comparisons of economic growth—safer in that it precludes the danger of omitting, from consideration of both causes and results of economic growth, a basic element—human population itself.

On purely formal grounds, one can argue that economic growth (or decay) stands for long-term changes in the over-all economic magnitude of the unit of observation (country, nation, etc.)—and a measure of such magnitude is the national product total, not any per-capita or per-unit ratio. If the total output of Brazil grew fivefold during the last fifty years and that of India only twofold, and in both cases there was no appreciable rise in per-capita product (I am using here purely imaginary figures), it would be torturing the sense of the terms to say that the rate of growth was the same in the two countries, rather than that there was more rapid economic growth in Brazil than in India. But on this purely semantic level there is room for fruitless controversy: to repeat an argument already suggested, one might claim that the term “growth” ought to be confined to movements in which there is significant structural change (in the direction of more manufacturing, greater organization, and so on), and that such changes are manifest only when per-capita product rather than merely total product rises. This would mean that if in both India and Brazil, to use again purely imaginary data, the shares of non-agricultural output remained the same over the fifty years, there was no growth in either country, whether or not total population and total product increased. We must get behind these semantic differences to their real implications, i.e., to what they mean for direction of study in the field.

It is my distinct impression that the choice of per-capita, per-unit, or any similar single measure to gauge the rate of economic growth, however much it is followed by analysis of factors that explain why it rose or failed to rise, etc., carries with it the danger of neglecting the denominator of the ratio. In a sense such neglect is an inevitable consequence of the operation: we divide national product by total population largely to eliminate changes in the former “produced” by mere changes in the latter. The implication of this division is the strict arithmetical rela-

tion of population to product; and once the division is made, further collection of data and analysis are naturally directed at dealing with the ratio proper, explaining why it moved the way it did (accumulation of capital, structural changes in industrial distribution, etc.). There is no natural return to a close examination of the population factor itself: it presumably was examined prior to its use in the denominator (and may have resulted in conversion to ammans, or workers, etc.). To put it bluntly, in insisting on gauging economic growth by such per-unit measures, economists are treating the population factor either as an extremely simple variable that can be handled by mere division (no matter how much refinement is put into formulating the denominator), or, what is worse, as an exogenous factor, beyond the ken of the economist as a student of economic growth.

If this danger of narrowing the field of observation and inquiry, associated with staying on the level of per capita, etc., is at all real, one may ask how the simple proposal implied in the comments above can help matters. The proposal obviously is that, in comparing the economic growth of two countries, one begins with the long-term movements in total product and then searches for data and analysis that may explain them: population and its various subgroups (important in their effect on output), capital accumulation, industrial structure, etc. This approach is in contrast to the usual sequence that begins with per-capita or per-man-hour output, and then, neglecting population, etc., proceeds to industrial structure, capital stock, etc. The point of the proposal is that it directs attention to the movement of total population and places it as much to the forefront as capital accumulation, industrial structure, etc. Although putting the population factor on the study agenda does not necessarily assure effective observation and analysis, its abandonment in economic analysis is likely to prove fatally limiting in dealing with problems of economic growth. In arguing for the total volume of national product rather than the per-capita, I am suggesting a change that should symbolize and give effect to the real widening of the field of required attention.

Direct attention to population movements should contribute to a most neglected phase in economic analysis as a whole, and not only in the field of economic growth: the behavior of human beings as producers and consumers. If instead of dividing by the number of people, consumer-equivalents, workers, or man-hours and forgetting about the denominator, one were concerned with the several groups within total population that are distinct as producers and consumers, if one were to build a bridge from the purely demographic classifications of population to their social and then to their economic characteristics, there would be less danger of neglecting what, in the short and particularly in the long run, may be by far the most important loci of social and economic decisions. There would, therefore, be some possibility that the heavy emphasis in economic analysis now placed on entrepreneurial investment decisions might be balanced by more adequate emphasis on decisions of persons as consumers

and as workers, on how and why they spend their income and how and why they choose the place of their work and the amount of time they devote to it.

THE INITIAL PREINDUSTRIALIZATION LEVEL

The questions raised and the comments made so far are largely methodological in character, although provoked by the substantive contributions made by the papers in Part I. We now pass to the questions that bear more directly upon empirical findings and that could be answered clearly if we had the appropriate data. Some data there are but, as will be seen, they are not sufficient to answer the questions.

Economic growth in modern times, by which we mean the period back to the mid-eighteenth century, has been closely associated with industrialization, i.e., the shift away from agriculture toward nonagricultural pursuits. This in a way was a surface manifestation of a more basic process—the increasing adoption of the fruits of empirical and scientific knowledge, which raised the levels of economic production to a point where a smaller share of resources could be devoted to agriculture and the satisfaction of basic but less expansive wants and a larger share to the non-agricultural pursuits and their products demanded and affordable at a higher level of economic performance. But this process of increasing adoption of empirical and scientific knowledge cannot even be observed directly, let alone measured: what we can measure is the complex of effects as evidenced by increasing income per capita and the concurrent shift away from agriculture.

A most interesting question arises as to the level of economic performance in a country just prior to the initiation of industrialization and more intensive economic growth. This new start means a break with the past, a cutting of the circle in which lower levels of economic performance are interrelated with other concomitants—population movement patterns, social institutions, cultural values, and the like. The level of economic performance at which this break occurs may have far-reaching consequences on the process of industrialization that follows, in particular upon the changes in social and political institutions that are found necessary or practicable in order to effect the transition. It may be that the lower this initial level, the greater the strain called for by effective industrialization; the greater the burden put on the state in carrying through the necessary transformation; and possibly the greater the pressure exercised by the state or other agents of industrialization upon the existing social institutions to effect the rapid change that is required. On the other hand, the higher the initial economic level, the easier it may be to secure the surpluses necessary for facilitating the process of industrialization; the more gradual the process of transition may be; the less painful the pressures which the active agents of industrialization may be required to exercise upon those institutions and sectors in preindustrial

society that are likely to become less important as a result of the transformation.

For these reasons it would be particularly helpful to be able to measure the initial levels of economic performance, prior to industrialization, in countries that have undergone the transformation and can now be considered industrially advanced. We could then evaluate the present status of those countries which we classify as underdeveloped and appraise their levels of economic performance, on the basis of initial levels in the past of developed countries.

By way of illustration in this connection, we may use the estimates of Colin Clark—they are only illustrative because their margin of error may be quite large and because they can be tested only by dint of further intensive research in a number of countries. For what they are worth, Colin Clark's figures suggest that the per-capita product in countries within the Western orbit was fairly high even before industrialization. Thus, in international units per worker, the product was: in Great Britain—516 in 1801 and 456 even in 1688 (for England and Wales); in the U.S.A.—604 in 1830; in France—304 in 1840-49; in Belgium—326 in 1846; in Germany—406 in 1854; in Sweden—353 in 1861-69; in Australia—914 in 1886. For all these countries I am using either the earliest available figure, or one for the period just prior to industrialization; and, interestingly, all are above 300 units, in several cases well above that figure. In contrast, Clark's estimate for Japan is 100 units in 1887, and even by 1920 it is only 190 units; for China, 138 units in 1935; for British India between 230 and 250 units (in the 1930's and the 1940's); for Brazil 163 in 1928, but rising rapidly to 297 in 1946. However, Clark also gives a figure of 114 for Germany in 1805 and 185 for France in 1789. (All citations are from the second edition of *Conditions of Economic Progress*.)

The wide margins of error in many of these estimates need no emphasis, and the figures can only suggest directions for further probing. The strong impression which they do convey is that the level of economic performance in such underdeveloped countries as China, India, and even Brazil today, is lower than that of several industrialized countries *prior* to their industrialization. Or to put it conversely, many of the countries that began their process of industrialization earlier had, prior to industrialization, per-capita product levels appreciably higher than those prevailing in many underdeveloped countries today. These older industrialized countries, if they *ever* were at per-capita product levels as low as those of many of the underdeveloped countries, must have gone through some phase in which their per-capita product rose prior to industrialization. If the national product of Germany did rise from 114 units per worker in 1805 to 406 in 1854, and if significant industrialization in Germany did not begin until the mid-century, what caused this conspicuous increase in the per-capita levels of economic performance?

The comments above may reflect an incorrect dating of the beginning of industrialization. Perhaps this process cannot be narrowly dated at all. But our purpose is only to raise the question as to the probable effects of the preindustrialization bases upon subsequent development. As already hinted, the fact that many of the late entrants into the industrialization process begin with such a low level of per-capita product and have to bridge such a wide gap may introduce elements of pressure and haste, of forceful breakeage of obstacles, of disregard of human costs, that were absent in the earlier cases.

This suggestion is reinforced by two other considerations, not explicitly mentioned so far. First, the significance of a given level of economic performance lies not only in its absolute, but also in its relative magnitude—relative to contemporaneous levels of economic performance elsewhere. In this sense, it is important not only that the per-capita product, say of India, is low, lower than that in many of the Western countries even in their preindustrialization days; but that it is also low compared with the per-capita product of the more advanced countries *today*. For the tension set up by lack of development is in part determined by the potential suggested by levels of economic performance elsewhere. This is partly a matter of the “demonstration” effect upon wide groups in the population who become exposed to it through increased contacts with the economically advanced countries; and partly a matter of what might be called “protection” effect, the desire for escaping the many possible disadvantages of an inferior economic status, in both peace and war. Until the entrance of Japan into the orbit of industrialization, the disparities in per-capita income between the industrialized and the shortly to be industrialized countries were quite narrow, and sometimes were in favor of the latter (the per-capita income of the United States may well have been higher than that of Great Britain even in the early nineteenth century). Today these disparities are enormous if we think of countries like India and Brazil as the next entrants into the industrialization process.

The second consideration is the obvious difference between the relatively young and empty countries and those with a long and crowded history behind them. The high per-capita incomes in the former (U.S.A. and Australia) prior to industrialization, already cited, and similar high levels in others (New Zealand, Canada) are impressive. On the other hand, the strikingly low level in countries like Japan and others in Asia is clearly due to the persistence over a long period of an older economic and social technique, perhaps only aggravated by some of the impacts of Western civilization (e.g., increase of surviving population without a correspondingly adequate change in levels of economic production). It is therefore quite likely that a high level of per-capita product prior to industrialization is associated with a young and relatively fluid society, or perhaps one recently rejuvenated by some favorable changes, both characteristics accounting for a relatively high level of per-capita product

even prior to industrialization. In contrast, a low level of per-capita product prior to industrialization may be associated with a long-lived and persistent type of economic and social organization whose peak contribution to economic efficiency may have been long past and which yielded the low level of per-capita product because of prolonged inability to overcome the restrictive elements in its historical heritage. If the contrast is at all valid, the low preindustrialization levels make industrialization by force likely not only because the gap to be made up is so big, but also because the obstacles to be overcome are so entrenched that they will yield to forceful treatment alone.

The implications of the difference for the long-run course of industrialization are also obvious, but it would take too long to spell them out here. It is clear from the preceding that the most favorable base for long-term economic development is in the new and young countries, where a mobile and already highly productive society is ready to adopt the potential contribution of scientific and technical progress—the kind of development that was possible in the United States, and is likely to be repeated on a smaller scale in Canada. It is under such conditions that the industrial system can be introduced without the crippling restraints of an authoritarian organization and great breakage of either historical traditions or human values. By contrast, the least favorable base for sustained economic development to high levels—short of a new industrial revolution—is in the older societies that have suffered from relative stagnation for a long time. But speaking in broader terms, one need not make a fetish of economic development aiming for the lofty heights of a relatively exceptional case like the United States; and one need not deny the high value of more modest attainments in the underdeveloped countries, e.g., erasing the more glaring economic deficiencies but not at the cost of a forceful reorganization that carries with it the dangers of long-run limitations on the basic sources of economic development, the free play and pressure of man's ideas and desires.

AGRICULTURE-INDUSTRY SHIFT

Both by definition, and as a matter of historical record, economies prior to the onset of the industrialization and intensive growth process are characterized by the dominance of agriculture, and of the rural population and its ways of life. In the younger and "emptier" countries, the favorable natural and sometimes social conditions yield substantial economic surpluses which may be used partly to extend agricultural cultivation and permit the population to increase with satisfactory or rising standards of living; partly, if conditions are favorable, to lay the basis for industrialization; and partly, if conditions are unfavorable, for conspicuous consumption on relatively unproductive types of consumer expenditure (e.g., luxury residential construction in the country's "metropolises"). In the older and more crowded countries, the dominance of agriculture is

likely to be accompanied by pressure of population on natural resources, under the existing conditions of agricultural technology; by disguised unemployment on land; and by economic surpluses that are small proportionately to total national output—because low productivity of agricultural output per capita of rural population means a low level of countrywide per-capita income.

The transition from an agricultural to an industrially developed economy would presumably follow different channels and involve different types of basic, “secular” decisions for the two groups of countries distinguished. In the case of the younger and emptier countries, which, it must be remembered, are historical offshoots of the older units within the orbit of Western society, the main question (and decision) is the direction of investment of the surplus arising in agriculture and in other extractive or related activities. Should this surplus be channeled into the extension of the same or similar types of extractive activity, tied in with the already established organization of the country’s main branches of production with the expectation of increasing even further the exports of the primary products to the more industrialized countries (often the “mother” country)? Or should the surplus be increasingly diverted into investment in the industrial structure at home, at the sacrifice of further possible expansion of export-directed primary industries? That the decision is not easy, even under conditions of political independence, is clearly demonstrated by the experience of the United States, where this issue was a major cause of the Civil War conflict. In the older and more crowded countries, the main question is how to pull out of the vicious circle in which low productivity in the dominant industry—agriculture—means low real-capital formation (either in commodities or in the capacity of the working population) and hence a low base either for a technological revolution in agriculture or for productive employment of the idle labor force. The problem here is not what to do with a given substantial surplus arising in the primary industries, but rather how to bring the economy to a point where adequate real surplus will flow into the proper channels to provide a widening base for sustained economic growth.

In the historical setting of the last two centuries, the secular decisions of the type suggested above had to be made under different conditions at different places and times and therefore depended upon the political and social milieu, both domestic and international. In several countries, some young and empty and others old and crowded, there was no full political independence; and the basic economic decisions had to be made within the limiting conditions of political subservience. India is a case in point. In other countries, particularly the older ones outside the orbit of Western civilization (*vide* Japan), the decisions had to be made, if under conditions of political independence, also under the impact of the industrially advanced countries which offered markets for some products of the native primary industries, and claimed, by force of arms if necessary,

the right of commercial and economic intercourse. In still other countries, with political independence and relative freedom from directly aggressive impacts of industrially more advanced units, the problem was complicated by the coexistence of a small offshoot of Western society with the much larger group of survivors of an indigenous culture of entirely different social and economic characteristics—as presumably was the case in Brazil. Thus, the general nature of the economic problem of transition from an agricultural to an industrially developed society was the same, but the economic means available for it differed significantly between the young and empty countries, on the one hand, and the old and crowded on the other. Yet for each country within these two groups there was, and is, historically, a specific constellation of political, social, and international conditions that may make it dangerously easy to explain why certain basic decisions toward industrialization were or were not taken, but that makes generalization quite difficult. Clearly, at this point, economic analysis must be combined with the contribution of cognate disciplines; and a variety of historical cases must be studied, if possible as representatives of *types* of conditions under which the transition toward a more industrialized structure is or is not made.

Only three general comments can be made here, largely in the light of the discussion in the papers in this part. The first refers to wasteful consumption—one way of absorbing the surplus from the primary industries, even in the old and crowded countries. The reluctance to emphasize here this use of surplus is due partly to lack of assurance that its magnitude relative to the economy's total output or even to the net surplus that it generates is at all significant (we must not confuse here savings of individuals with the real economic surplus, a point to be discussed below). But a more important point is that such conspicuous consumption seems to me chiefly a function of other, more basic factors that determine the investment of the surplus. In the younger countries, with a sizable surplus of the primary industries, wasteful consumption at upper levels will loom large when the country is still agricultural, and when a major sector of it is organized in large units specializing in production of raw materials for export. The latifundia or Southern-plantation type of life seems to us more wasteful than the consumption patterns of the upper levels in an urban society—because it is geared to a continuation of an agricultural society which, in historical retrospect, we view as backward. In the older countries, much of conspicuous consumption is associated with the absence of channels and favorable conditions for productive investment and with a desire to accumulate the surplus in a storable and transportable form, be it jewelry, bullion, or foreign balances. In either case (and I am disregarding here the more obvious example of the foreign elite in colonial surroundings), conspicuous or wasteful consumption of the surplus is only a corollary of, and less significant than, the basic types of disposition of the economy's surplus, which are either perpetuation and

extension of the primary industry or the building-up of the industrial-urban sector in the younger countries; either perpetuation of restricted opportunities for productive investment or use in overcoming the restrictions of the traditional methods of operation on the land (in the older countries).

Second, it is extremely difficult to find rational decisions in the shift toward industrialization, assuming that rational decisions are possible. There are always short-term arguments for various alternatives: in the younger countries for continuing to exploit the existing differential advantages and concentrating on export-directed primary industries, on the assumption that peaceful relations persist and the network of international trade will continue its efficient functioning—as well as for shifting more resources into domestic industry to become more independent of international trade ties and to gain a more secure position either in armed conflict or in economic warfare. In the older and more crowded countries, there is the choice between trying to engage the unemployed resources on the land, with little need for sizable new capital investments; and trying to shift them to large-scale, more capital-requiring industries—with the consequent greater demand for foreign capital, and whatever this implies. The apparent short-term needs must always be balanced against the longer-term prospects and possible trends; and to evaluate the latter, under alternative conditions in international relations, is a venture-some task. Obviously, the decisions are actually made in the clash and clamor of conflict among groups, sections, and class interests cognizant of their short-term interests and rationalizing them, if need be, into long-term programs claimed to be of benefit to the economy at large in the long run. It is equally obvious that economic arguments and claims are combined with a variety of others. But the interesting point, the crucial question, is whether a rational economic decision for the long run is truly possible, without a margin of error that is so large as to make the intellectual ground for the decision a worthless swamp.

My third comment is in a sense an illustration of the question just raised and bears upon the problem of long-term prospects of agriculture in the older and crowded countries, assuming their successful industrialization. In the younger and empty countries, the long-term relation between agriculture and food supplies for the population is less important because, despite the “swarming” of population aided and abetted by immigration, industrialization permits the assumption of an increase in productivity of agriculture sufficient to assure adequate domestic food supply. But what about the older and crowded countries like Japan? The decision to increase agricultural production without a revolutionary change in land organization and agricultural technology provided a basis for vigorous growth in agricultural productivity. But as Dr. Lockwood’s paper clearly shows, the growth was not as rapid as in the urban industries; and in the face of growing population, greater reliance had to be placed on import of food products. The effect of this situation upon attempts by Japan to

incorporate within its borders other areas, which could supply both agricultural and industrial raw materials, is subject to controversy. But is it possible that the failure to revolutionize the domestic food supply, like the earlier, more overt decision by England with which Japan is so much compared, set the base for an attempt to grow as an industrial workshop, for creating a balance between agriculture and industry only on condition of a successful and stable development of economic co-operation over an area transcending the limits of Japan proper? (This finally eventuated in the Asian co-prosperity sphere.) Can one argue that, in the *longer* run, it might have been more advantageous (if at all possible) at some point to attack more directly the problem of the domestic base for a sustained if slower economic development—a base that would have damped the aggressive tendencies and might have made for a more secure growth? Or, under such conditions, would an impossibly difficult situation have been created in which a slower growth of domestic industry would have resulted in backing up a much larger and consequently less productively employed population on the land? Similarly, in the case of England, in the long run, would a decision not to let agriculture lose its importance in the country, not to become primarily a workshop of the world, have led to a slower, but more sustained growth within the country—as well as slower, and hence competitively less dangerous, growth elsewhere? Or would the cost, reflected in a lower level of economic development, both in England and in many other countries, have been altogether too high?

Obviously, such questions are difficult to deal with; and their very formulation may possibly be misleading, with the substitution of hindsight wisdom for foresight perplexities. Furthermore, our comments have scarcely touched upon the driving forces behind the secular decisions discussed, or upon cases where no effective decision, no satisfactory shift towards industrialization, was attained. Yet it is legitimate to argue that the course of economic history reveals decisions made, steps taken from an agricultural towards an industrial economy, which had long-term consequences and were often recognized as such by contemporaries; but these were decisions for which no genuinely rational basis was feasible since the various alternatives could not be weighed even reasonably roughly. The eventual implications of such a situation for observation and analysis of processes of economic growth are far from clear at present; but unless the comments above are based upon a cardinal misconception, they must be far-reaching.

SAVINGS AND CAPITAL FORMATION

Our definitions and analyses of savings and capital formation are deeply colored by the experience and problems of the developed economies; and several questions arise about their applicability to the less-developed countries or earlier stages of economic growth. In view of the strategic importance assigned to capital in the process of industrialization, these ques-

tions ought to be explored to provide a somewhat firmer basis and perhaps more effective direction to statistical research. In the brief discussion below the comments are grouped about: (1) the distinction between ultimate consumption and capital formation; and (2) between gross and net capital formation; (3) the differentiation between consumer expenditures and savings; (4) the relation of savings to capital formation.

1. The distinction between flow of goods to consumers (individuals and households) and capital formation is at the level of real product and deals with goods and services, not money claims—with one exception, viz., the net changes in claims against foreign countries (a component of total capital formation). The customary practice is to limit capital formation to new construction (including residential housing), flow of producers' durable equipment (machinery, etc.), net change in business and government inventories, and net change in claims against foreign countries. A narrower definition would exclude residential construction. A wider one would include, in addition to residential construction, flow of other consumers' durable goods (passenger cars, furniture, and the like); which would mean excluding them from flow of goods to consumers, and modifying national income to include the yield on consumers' durables (just as it includes, in the standard definition, the yield on residential housing, even when owner-occupied).

The importance of this distinction for problems of economic growth is that capital formation does not include, even in the rarely used wider definition, a number of categories of goods flowing to consumers that seem extremely important as investment in the country's productivity. Of course, in a sense, without a minimum flow of goods to consumers, no production is possible. But there is a genuine difference, from the viewpoint of contribution to future productivity, between a supply of goods to consumers that permits them barely to survive and a supply that provides educational, recreational, and health facilities and permits the members of the community to operate much more efficiently as active economic agents. These productivity-increasing elements in flow of goods to consumers are just as much capital formation as another machine, another building, or another bundle added to business inventories. And it goes without saying that the supply of this type of consumer goods, whether commodities or services, is proportionately much greater in the developed than in the underdeveloped countries; and in general is greater, the higher the level of per-capita national product.

The main but not the only reason why such items are excluded from capital formation in the usual estimates for the developed countries is that they are not financed in the same way as the standard components and are not therefore part and parcel of the complex mechanism by which savings are channeled into real investment or capital formation. But clearly this is no reason for neglecting them in considering problems of economic growth. Obviously, any comparison of the relation of capital

formation to economic growth is incomplete without at least some consideration of the flow of goods to consumers—to reveal how much of the latter can be considered functionally equivalent to capital as a tool for maintaining and increasing the country's productivity.

2. In measuring construction and producers' durable equipment as components of capital formation, the usual practice is to estimate them both gross and net of current consumption. (For inventories and claims against foreign countries a strictly net basis is invariably used, regardless of the statistical procedure by which these net changes are estimated.) From the standpoint of gauging additions to capital equipment as one of the factors in economic growth, it would seem as if *net* rather than gross additions to construction and equipment should be emphasized: after all, what has been consumed is presumably no longer available for productive use. But this impression may be an illusion; and what is more important, much more of an illusion in the developed than in the underdeveloped countries.

In the industrialized societies, the allowance for capital consumption is largely for obsolescence rather than for actual physical deterioration, particularly in the case of producers' equipment and plant construction. Because technical improvements are continually being made, the economic value of capital goods once installed declines, and allowance for this decline must be included in the cost calculations of enterprises. Hence when the capital good is actually replaced, and the number of dollars spent is equivalent to the accumulated consumption charge—even with complete allowance for changes in the general purchasing power of money—the previously existing productive capacity is not merely retained: it is rather increased, and by significant margins. Thus, even if net capital formation in construction and producers' equipment is zero, i.e., replacement equals the consumption charge, there is a significant net addition to the productive capacity of existing capital.

If the allowance for capital consumption in the developed countries reflects largely the pressures of technological change, it follows that in the less developed countries such pressures are much weaker. Hence, it is quite possible that the allowance that has to be made in the underdeveloped countries for capital consumption is more truly for physical deterioration than for obsolescence. For example, capital consumption in a developed country may stand for obsolescence of a machine tool due to rapid technical progress; in an underdeveloped country, for the physical deterioration of a flimsily built plant that actually disintegrates with the passage of time (or exhaustion of the soil's value which has to be replaced every year). To the extent that this is true, the proper comparison, from the standpoint of economic growth, may be between *gross* capital formation in an industrially developed country and *net* capital formation in an underdeveloped one.

The bias just suggested in the usual comparisons, between net (or

gross) capital formation in both types of countries, may be large enough to exceed appreciably an opposite bias, resulting from the usual omission from estimates of capital formation of improvement activities, within an individual firm (e.g., a farmer's work on improving the land). My own impression is that the usual comparisons underestimate the relative weight of capital formation in the national product of developed countries compared with underdeveloped countries—if capital formation is to be viewed as an engine of economic growth.

3. Although savings and capital formation are identical for a country, this is not necessarily so for any given group of savers. Some individuals may save, but their savings may be channeled into current consumption of others and the corresponding dissavings elsewhere in the economy may mean no nationwide savings or capital formation. In gauging savings for any group within the economy, we cannot, therefore, guide ourselves completely by the volume of capital formation associated with the savers: we must also allow for a possible change in their claims against other sectors in the economy. But even so, we can measure savings of any group as the difference between their current income and their current consumption outlays: this difference may be represented either by net changes in stock of capital goods in the hands of the savers, or by net changes in their claims.

The major point of interest here is the definition of current expenditures, the subtrahend in the operation by which we calculate savings for various saver groups in the economy. And the point is not whether some of these current expenditures are functionally equivalent to capital formation. Rather we must realize that in the underdeveloped countries there may be, among these current expenditures, items that represent saving for security purposes, additions to hoards of valuables viewed as effective claims in the future—a motivation that does not seem to be as strong in the case of similar purchases in industrially more developed countries. Is the acquisition of jewelry by women in India, even at relatively low economic levels, to provide some assurance for the future, really a current expenditure or is it more similar to putting savings in the form of currency under a mattress? In neither case is there real capital formation, unless we include jewelry under consumers' durable goods and enter net changes in the latter under capital formation—an objectionable treatment if capital formation is to have some relation to increases in productive capacity. But in both cases there is diversion from current income to a hoard of claims—in one case in the form of currency, in the other in a stock of jewels whose value may be assured because of their easy transportability and exchangeability.

The issue in question cannot be resolved too clearly, because there is not only a mixture in motives but also lack of certainty as to the specific money values to be attached to such "savings" (which are fixed in the case of legal claims, like currency, bank deposits, bonds, etc.). But the

existence and perhaps the relative importance of such types of savings in underdeveloped countries seem undesirable, particularly those in which there exist small groups at an economic level high relative to the country's average, and warrant consideration in statistical analysis of the problem. Of course, savings assume this form because of uncertainties in the economic and political situation and because of the scarcity of channels in which they can, with security to the owner, take the form of fixed legal claims or of assured claims on the income of an enterprise that can use them to increase productive capacity. This brings up the last point for consideration here, the relation between savings and investment.

4. Even in the highly developed countries, savings by individuals, quantitatively the most important category, may not eventuate in real-capital formation: a large proportion is diverted into current consumption by governments in time of war or deep depression, and some may stagnate in pools during the contraction phase of business cycles—with the necessary offsets in losses by business enterprises and correspondingly lower levels of nationwide savings and capital formation. But disregarding these short-term phenomena, and fixing our eye on the longer-term processes, we can argue that the political stability and social efficiency of the developed countries, with their multiplicity and flexibility of institutions and practices devised to channel savings into economically advantageous investment outlets, assure an effective flow of savings into capital formation. By contrast, a prevalent characteristic of underdeveloped economies is the relatively unfavorable political and institutional milieu for guiding the small amounts of net savings by individuals into the more efficient channels of real-capital formation. Although a substantial part of savings by the upper income groups in underdeveloped countries may go into financing current expenditures of the lower-income groups who are compelled to supplement their meager earnings by borrowing or by selling assets, the remaining net savings of individuals taken as a group may still stagnate in hoards; or, if invested, are likely to flow only in such channels as provide some security because of personal ties with the businessmen who use the money, physical proximity to them, and the like. The absence of developed countrywide credit and financial institutions and the lack of well-established patterns of reliance by individual savers on financial institutions capable of channeling the money into productive investment contribute to a markedly less efficient use of net savings of individuals in financing potentially advantageous types of capital formation. It is in this connection that the family character of business enterprises in the less developed countries, the tendency to place savings in the relatively invulnerable form of land or into the quick turnover form of inventories, or in the comparatively secure form of foreign claims, come easily to mind.

If this point is valid, it follows that the relatively low levels of real-capital formation in underdeveloped countries are only partly a function of low levels of savings by individuals (or other savings groups such as

business enterprises). They are also partly a matter of relatively inefficient channeling of whatever net savings the economy generates into productive capital formation. Since this in turn is associated with a whole gamut of political and institutional conditions, the implication is that a change in the latter may produce a larger volume of real-capital formation without an increase in savings. But a change in political, social, and institutional conditions, favorable to a more efficient flow of savings into real-capital formation, would most likely also favor a rise in the volume of domestic savings. Thus, political security and efficiency, a development of proper financial institutions, and a sounder state of domestic currency, would presumably also mean extending the horizon of economic expectations and planning, and should increase the propensity to save, as compared with a situation in which, for lack of better opportunities, such savings either lie stagnant in the form of hoards or are used for accumulation of assets the preservation of whose values may well be problematical.

This circumstance may contribute to an explanation of the fact that in the historical development of most countries of any size, capital funds from abroad have financed only a limited fraction of the growing volume of total capital formation. As long as conditions in the underdeveloped countries are unfavorable to an effective channeling of savings into capital formation or to a high level of the propensity to save, foreign capital will obviously be reluctant to come in—except under conditions of special privileges and protection, which are never really satisfactory in the long run and which the debtor countries may grant only under duress. When conditions become favorable, the savings are channeled into more productive channels than before and the propensity and capacity of the economy to save are increased. One should also note in the latter connection the effects on the consumption patterns, in reducing certain types of conspicuous consumption, the need and value of which tend to be lowered considerably by the effects which a shift in social conditions and ideals implied in the change assumed may exercise. These comments suggest emphasis, in studying the process of economic growth as a transition from an agricultural to a more industrial society, upon the evolution of new patterns of organization in the fields of business and finance, and upon the changes in the structure of consumption, the latter always the dominant share in the country's total product.

CONCLUDING COMMENTS

The discussion has ranged over a wide field in which the established evidence is meager and our competence limited. If only because of restrictions of space the comments above are hardly more than desultory attempts which only scratch the surface—perhaps even the wrong one. But to repeat the introductory statements, they are intended to provoke further thought and closer consideration of directions of further research

rather than to contribute tested conclusions or to provide an appraisal of the papers that follow—tasks beyond my competence.

Under the circumstances, it is pointless to attempt to summarize the discussion. But it may be useful, in conclusion, to add a few observations that may indicate more clearly some implications of the discussion for research in the field.

First, most of the definitions employed in economic discussions of the process of growth—national product, labor force, consumption, capital formation, savings, etc.—have been evolved in dealing with the evidence for developed, industrial economies of the type prevalent in Western countries. Quite often, they have been forged to treat some pressing current problems, not necessarily those of economic growth; and in the process certain long-term characteristics of the developed countries were implicitly taken for granted. A closer examination of the concepts reveals a number of vague spots and inadequacies if they are to be used for observing and analyzing processes of economic growth, particularly in their earlier, preindustrial phases. Therefore, a critical examination of the concepts, the main tools of analysis and observation, is among the high-priority tasks in the field—since its results would necessarily affect what it is that we measure, and might redirect the flow of analytical attention into more effective channels.

A second, closely related observation, is that the concentration of economic analysis in recent decades, indeed since the second half of the nineteenth century, on short-term problems has narrowed its focus. It has led to what, under the circumstances, may have been a necessary, but otherwise misleadingly dangerous, oversimplification of relations of economic variables in isolation from others which, for the purpose at hand, were treated as noneconomic or exogenous (or autonomous as distinct from induced). The tremendous gain attained thereby in the capacity to handle current short-term problems carried with it also a heavy cost—most clearly realized when one turns to problems of long-term change, but affecting even the handling of some nonsecular changes. Thus, it is dangerous to carry over relations that may have been quite useful and valid in the short run, to the long-run processes—as comparisons between results of cross-section or cyclical analyses of the relations between income, consumption, and savings with those of the long-term analyses show—to give only one obvious example. It is equally dangerous to try to deal with what in short-term analysis are exogenous variables by a mere shift from constant coefficients to coefficients changing at some assumed simple rates—thus “dynamizing” the analytical models devised for static or short-term analysis by a simple mathematical trick. Obviously, in the processes of secular change, not only are the constant coefficients replaced by complex functions; but the very sets of variables are changed, and new ones are introduced whose relation with those already used in static analyses may be unknown. Many institutional variables, now taken for granted

in short-term analysis and excluded, have to be incorporated into a truly "dynamic" model; and the question whether they can be brought into some determinate relations with the more strictly "economic" variables can hardly be assumed away.

Third, in the critical re-examination of concepts, established relations, and analytical models needed to adapt the contribution of economic analysis to the treatment of problems of economic growth, a wider empirical frame of reference clearly seems indispensable. For a wider coverage of the diversity of growth experience is both a necessary goal and basis for the adaptation that is required. One cannot avoid the impression that much of current analysis of economic growth suffers from too narrow an empirical basis; that, e.g., much of the recent discussion by economists of the problems of underdeveloped countries is grounded upon an experience range of two or three decades in one or two industrialized countries—usually the native country of the analyst. This comment may be unfair, but it does seem that tested evidence used in such analysis, evidence relating to past economic growth, is extremely limited. Such limitation may be due partly to scarcity of data; partly to the limited resources devoted in the past and in the present to such data as were available; partly to the neglect of results of past work buried in the literature of other countries and of other disciplines; partly to the difficulty of meshing in the evidence with present concepts and analytical models. Whatever the reasons, there does seem to be need for addition to the stock of tested and usable evidence—both quantitative and qualitative. As already indicated, there is particular need for attention to earlier, crucial periods of transition from preindustrial to industrial status of the presently developed countries.

This may seem like a call for escaping present difficult analytical problems by collection of more data and yet more data. Yet, aware as I am of this possible connotation, there seems no honest way out of a judgment of the inadequacy of the present supply of organized, accessible empirical data. And although some preliminary theoretical notions must precede and guide the collection and observation of empirical data, it does not follow that we must have a full-fledged theory of economic growth before we can add effectively to our stock of relevant, tested data. We can agree on differences in the rate and structure of economic growth among countries or periods, on the *fait accompli*, while disagreeing on the factors that presumably brought about these indisputable, recognized differences. At the present stage of work in this field, when discussion and analysis suffer from the paucity of properly organized and established evidence, much is to be said for seeking agreement on how we should and whether we will record the facts of economic growth and enrich our empirical frame of reference—without assuming that an articulate theory of determining factors is indispensable first.

Brazil: Trends in Industrial Development

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INTRODUCTION

BRAZIL IS THE largest of the Latin-American republics and is also the most highly industrialized, judged by the total number of workers engaged in manufacturing and the range of manufactured products. Brazil also leads in this area in such matters as the testing and standardization of materials and the stage of technological advance. At the same time, considered on a basis of per-capita income, Brazil is behind several other countries, and is relatively less mechanized in that its per-capita consumption of mechanical power is lower than that of some other Latin-American nations. The Brazilian averages are lowered by the fact that the population is 65 per cent rural as well as by the absence of a large mining and smelting industry (as in Mexico and Chile, for example) and the limited development of railways and motor traffic.

Most of the statistical tables relating to economic and industrial development of Brazil used here have been placed in an appendix to avoid interrupting the flow of discussion. Following a general review of Brazilian development, in which, for obvious reasons, there is considerable emphasis on agricultural and extractive industries, we follow with a brief sketch of industrial evolution. The main burden of the discussion is, however, upon factors in industrial growth—transportation facilities, capital, entrepreneurial skills, national policy, etc.

FACTORS IN BRAZILIAN DEVELOPMENT—GENERAL

In Brazil, as elsewhere, economic evolution has been primarily the result of the interaction of the people and the physical factors found within the country's borders, but at the same time profoundly influenced by outside forces such as markets, trade routes, the slave trade, and commercial conventions. The riches obtained at different periods from a succession of tropical products have derived from a rising demand at good prices and favorable commercial policies on the part of the consuming nations. On the other hand, the colonial policies of the European nations adversely in-

fluenced Brazil's position as a sugar exporter. The fact that the United States is the only important country in the world that admits coffee duty-free is a factor in the relations between the two countries. During the first half of the nineteenth century, Brazilian sugar found a good market in the United States, but lost out to Cuba, which was not only a more efficient producer but also had the advantage of proximity. Since 1903 Cuban sugar and tobacco have enjoyed preferential duty status in the United States, as well as close financial interrelationships.

At different times Brazil has derived large returns from the exportation of products in which, for a time, it had exceptional advantages. According to the late Senator Simonsen, who was a careful student of economic history, there were "lengthy periods about the middle of the seventeenth century when Brazil's annual sugar production for export exceeded £3 million, a figure not then reached by England's total exports."¹ Simonsen also estimated that Brazil's gold exports in a period of a little over fifty years during the eighteenth century were equivalent to 50 per cent of the entire world production for the previous three hundred years.

This wealth was distributed among a relatively small group of persons. The available evidence indicates that a surprisingly small proportion of it was invested in permanent improvements or in the training and education of future generations. One explanation is that disproportionate amounts went for "conspicuous consumption," but perhaps a more important reason lies in the basic unsoundness of an operation based on slave labor. The Marquis of Pombal, Portugal's great Minister, could see no advantage from Brazil's gold:

To work the mines, it is necessary to have a large capital expended on slaves. If this sum be twenty millions, the interest, which is one million, independent of the cost of extraction, must be the first money paid for this produce. Add to this the food and clothing for more than an hundred thousand persons, blacks and whites, which the mines carry to Brazil, which food is not to be had in the colony, but must be purchased from foreigners.²

We have here a vicious circle: Brazil's climate and the colonial policy of the times determined the character of production, and all of these together fastened slavery on the country. The vast extent of the country, in relation to its small population, invited extensive and wasteful operations and migratory agriculture. Not until after the middle of the nineteenth century did Brazil attract European immigrants in large numbers, and then the larger part went to the southern states. Hence a high proportion

¹ Roberto C. Simonsen, "Brazil's Industrial Evolution," *Brazil Today*, I (Jan., 1941), 2. The figures, although somewhat misleading, are nonetheless impressive.

² *Memoirs of Pombal*, quoted by Alan K. Manchester in *British Preeminence in Brazil* (Chapel Hill, N. C., 1933), p. 40.

of the population has consisted of groups at a low level of general education and technical skills.

Some interesting sidelights on the development process may be gleaned from a comparison of the histories of the adjacent states of Minas Gerais and São Paulo. During the first two centuries after the discovery of Brazil both regions were comparatively sparsely settled. Following the discovery of gold in Minas at the end of the seventeenth century there was a rapid influx from other sections of Brazil, including many planters and their retinues of slaves. The gold fields were an important slave market for years, and slaves were in demand also for agricultural work and household services. Both states shared in the coffee boom of the nineteenth century and the industrial expansion of the twentieth. As late as 1890 the population of São Paulo was less than half that of Minas Gerais. Today São Paulo is not only the most populous state in Brazil but by far the most important economically, accounting for over half of the industrial output and 41 per cent of the commercial transactions of the nation. It is not only the leading coffee-producing state but is also in first position as a producer of such important crops as cotton, rice, potatoes, and all the major fruits, as well as in second position as regards sugarcane, corn, and grapes. Minas Gerais is second in population, second in coffee, and first in corn and beans.

The enterprising character of the *Paulistas* showed itself early. During the colonial era *bandeirantes* from São Paulo had penetrated into all sections of the country and had established settlements in the São Francisco valley and in Rio Grande do Sul. *Paulistas* discovered the gold mines of Minas, Goiás, and Mato Grosso. During the colonial period comparatively few slaves were brought into São Paulo, although there had been much crossing with Indian blood. With the expansion of coffee culture around the middle of the nineteenth century, large numbers of slaves were brought in, chiefly in the coffee zones in the Paraíba valley and in eastern parts of the state. It soon became evident that slaves did not provide a solution to the labor problem. São Paulo took the lead in organizing European immigration on a large scale. Present-day São Paulo owes its character and position largely to the immigrant, although the *bandeirante*, the *fazendeiro*, the *caboclo* and the African slave have left their mark.

São Paulo owes its start, therefore, to the initial enterprise of the *Paulistas*, to a soil and climate attractive to European settlers and suitable for a variety of crops, and to the fortunate circumstance of a rapidly expanding world market for coffee at the moment when European immigrants were available in large numbers. As compared to São Paulo, Minas Gerais has generally poorer soils, uneven topography, and a climate and social organization less attractive to newcomers.

During the first three centuries of Brazil's history economic activity was confined chiefly to extractive operations to provide export products.

There was a certain amount of subsistence farming, grazing, and hunting. Most manufactured articles and a substantial part of the foodstuffs were imported.³ Some commercial agriculture developed, and the supplying of cattle for meat and oxen for traction and power became an important activity. Small ships were built for river and coastal navigation. During the course of the nineteenth century, as population and wealth increased, the domestic market became more important. The opening of railways and steamship lines and the introduction of telegraphy effected a revolution in transportation and communications, but these improvements were significant chiefly in connection with the export-import trade and the international movements of peoples. Despite substantial advance in industrialization, to be discussed below, it was not until the end of the century that the attention of national officials became focused on the problems of the internal economy.

A National Society of Agriculture, organized in 1897, called the first National Congress of Agriculture in 1901 and the first National Cotton Conference in 1916. In 1902 it was officially charged with the work of distributing seeds and plants and of introducing blooded stock. The state of São Paulo, which had taken the lead in organizing and subsidizing immigration, set up a State Department of Agriculture in 1905. A Federal Ministry of Agriculture was authorized in 1907 and began functioning in 1910. With the creation of a national department devoted to agriculture, attention was also turned to the need for trained agronomists.

Prior to World War I, Brazil annually imported substantial quantities of such staple foodstuffs as beans, rice, wheat, fruits, lard, bacon, and butter. One of the first commodities to receive official attention was rice. The import duties on rice were increased in 1903 and again in 1906. By the time of World War I imports had become insignificant, and exports on a small scale had begun. The production of sugar and cotton was revived. The influence of the war was particularly notable in stimulating the meat-packing industry, which was just beginning in 1913. Brazil had vast herds of a poor quality of native cattle descended from the race introduced by the Portuguese in the early colonial days, but greatly deteriorated. Efforts were made to improve the strain, but difficulties were encountered owing to the fact that bulls imported from Europe were liable to Texas fever. Experiments were also made with the Zebu or Brahman cattle, which now predominate in some sections of the country. In the southern states, particularly Rio Grande do Sul, some success was achieved with Durhams and Herefords.

The lean herds had been well suited to the production of jerked beef, or *xarque*, which is a favorite article of consumption throughout Brazil.

³ This point should not be exaggerated, however. Mandioca, beans, and corn were grown on the sugar estates as well as in the interior, and coarse cloth was made from native cotton on primitive spinning wheels and hand looms. Tobacco was grown for export and for local use.

It was estimated in 1914 that Brazil consumed 180 million pounds of *xarque* annually, but produced only 140 million pounds. Under the pressure of war conditions, Brazil was able not only to develop considerable export of jerked beef, but also to built up a considerable meat-refrigerating industry.

The first meat-freezing plant (*frigorífico*) was opened in 1913 to supply chilled meat to the city of São Paulo. It was built by local capital, and export apparently was not seriously considered until the outbreak of World War I created a strong demand for food supplies. An experimental shipment of one ton was made to England in November, 1914, and was well received. In 1915 a second *frigorífico* was established by an American enterprise, and by the end of the war three other large American packing concerns had entered the field. The entry of the packing plants gave a definite impetus to the improvement of livestock.

Conscious of the opportunity afforded by the war, the federal government early in 1918 set up a national commission (*Delegação Executiva da Produção Nacional*) which undertook to obtain the co-operation of the states in increasing domestic production. The commission distributed seeds and insecticides, and also imported from the United States agricultural implements and tools, which were turned over to farmers at cost.

The efforts toward diversification and improvement of agricultural methods were continued after the war. The Cotton Service of the Ministry of Agriculture was created in 1920, and reorganized, beginning in 1923, along the lines followed in the United States, which was taken as a model; and increasing attention was given to seed selection and matters of classification. "Co-operative fields" were established where private lands were cultivated under government supervision and utilizing government-owned machinery.

Early in the century wheat cultivation was revived in the state of Rio Grande do Sul, and Italian colonists established wine and silk industries. It may be noted in passing that tea from India, introduced in the state of São Paulo in 1825, attained some importance about the middle of the century, but could not compete with Oriental producers. There has been a revival of tea culture in recent decades. Today Brazil supplies most of the internal consumption and has an export surplus.

Brazilian agriculture has many deficiencies, but foreign observers have been too prone to accept shop-worn criticisms without adequate investigation. For example, too much has been made of Brazil's failure to retain her export position in commodities in which the country once held world leadership. In the case of some, e.g., dye woods and gold, the decline was due to exhaustion of resources. In the case of cotton, tobacco, and sugar, the colonial policies of the European countries were decisive at certain stages. Protection to the beet-sugar industries closed some continental markets. During the first half of the nineteenth century, sugar exports revived in response to rising United States consumption. Although lagging

Brazilian technique was a factor in the outcome, it is doubtful if Brazil could have held out against Cuba's advantages in proximity and better soils. As regards rubber, Brazil had advantages as long as rubber from native growths supplied the demand, but could not compete against plantation rubber grown in colonial regions free from leaf disease and possessing large labor reserves.

Too much has likewise been made of the misleading statement that Brazil is a "one-crop" country. The truth is that Brazilian agriculture is highly diversified—in some respects too diversified, since some crops are grown that cannot be produced efficiently under Brazilian soil and climatic conditions with known seed varieties. Much of Brazilian agriculture of the export type does not lend itself readily to mechanization—coffee, cacao, sugar cane, maté, and some fruits—and is very sensitive to changes in world prices and national policies. During the 1930's and early 1940's coffee and cacao trees were neglected because prices were relatively unremunerative, but there was a big expansion in cotton, oranges, bananas, and castor beans. During the two world wars high prices stimulated production and export of corn, beans, manioc, and meat, as well as woods, oils, and minerals. Brazilian cotton filled the breach in the 1870's and again in the early 1920's when American cotton crops were short. Given the availability of new lands, the relative labor shortage, and the character of soils and crops, it has not been economic in the past to spend money on rebuilding soil and in maintaining stable output in the face of shifting world demand. As fertile new lands become scarcer and more expensive, and farther from ports and consuming centers, and as population grows, more attention will doubtless be given to the rehabilitation of exhausted areas. A considerable part of the abandoned coffee lands has been put to other uses.

A third misconception relates to the position of the large estate in Brazilian economy. Brazil has many large estates, but subdivision of large properties has gone forward rapidly during the present century. The *fazendeiro* has lost much of the political power and social prestige he once enjoyed. During the early years of the century the decline of coffee prices forced some planters to dismember their estates. The growth of cities and rising land values have made subdivision and the founding of new centers of population a profitable business. European and Japanese colonists and immigrants have required small holdings. In some sections there has been excessive subdivision. The 1940 census showed that out of a total of 1.9 million agricultural-livestock establishments, 75 per cent, or 1.4 million establishments, had 40 hectares or less and that these properties produced 42 per cent of the total value of agricultural production. In an address by the Brazilian Minister of Agriculture, the Hon. Daniel de Carvalho, in 1949, the statement was made: "The large estates have been split up to such an extent that in certain regions we are now facing the

problems of unprofitable production due to the small acreage of the farms."

The livestock industry is relatively less important today than in earlier periods. During the colonial period cattle were valued not only for their meat, hides, and by-products but also as the chief source of motive power in the sugar mills and of traction for carts. Oxen are still the chief source of locomotion in some areas. Up to 1850 burros furnished the chief means of transport in the states of São Paulo and Minas Gerais. Brazil's cattle population is exceeded by that of only a few countries. It is estimated that there are today about 46.4 million head in the country as compared to 30.7 million in 1912. Hog numbers have increased from 18.4 million in 1912 to 23.8 million in 1946. Sheep have increased about 50 per cent. On the other hand, the number of horses, asses, mules, and goats has declined drastically. Per-capita meat consumption appears to have dropped sharply since the 1930's. Some progress has been made in improving beef and dairy-cattle strains. The dairy industry has expanded.

The view is widely held and frequently expressed that agricultural production has not kept up with population growth, and some statistics have been adduced to support this position. For example, the Ministry of Agriculture in 1947 prepared a quantitative analysis of the consumption of foodstuffs during the period 1933 to 1946, showing that per-capita consumption had declined from 436 kilograms in 1933 to 391 kilograms in 1946.⁴ Considerably more optimistic conclusions are reached by economists of the United Nations Economic Commission for Latin America, who have prepared quantum indices showing that agricultural production in the period 1945-49 was 55.8 per cent greater than in 1925-29 and 72.4 per cent greater in 1949 than in 1925-29.⁵ This compares with an increase of population of 46.9 per cent between the average for 1925-29 and the year 1949 and an increase of 229.9 per cent in net industrial production during that period. All of these figures, to be sure, are subject to serious reservations on account of the unreliability of the original production and value data as well as the somewhat arbitrary method of calculation.

A somewhat more refined analysis of the 1940-50 period has been made by Luiz L. de Vasconcelos in a recent study published by the Fundação Getúlio Vargas, Brazil's leading economic institution.⁶ His data showed a 49.1 per cent rise in the tonnage of production of the 21

⁴ Ministério da Agricultura, Serviço de Estatística da Produção, *Consumo de Gêneros Alimentícios no Brasil* (Rio, July, 1947). This analysis covered twenty-three vegetable and animal products. The authors recognized the limited meaning from a nutritional standpoint of a given consumption on a weight basis without allowance for changes in the type of production.

⁵ See Table II. 7.

⁶ "Quadros de Produção Brasileira (1940-1950)," *Revista Brasileira de Economia*, ano. 4, No. 4, Dec., 1950, pp. 71-100.

principal crops between 1940 and 1950 and a 28.7 per cent quantum increase (values at constant prices). The increase was even larger for eight other crops for which official data are available only since 1944. Population rose 27 per cent between 1940 and 1950. During the period 1940-50 the cultivated area increased by 4.9 million hectares, the expansion being particularly large in the case of tomatoes, peanuts, wheat, rice, beans, mandioca, sugar cane, sweet potatoes, and corn—all of which are grown primarily for the internal market. Most of the increase came from medium-size or large farms that used machinery. Vasconcelos' data also indicate that there has been an increase of productivity, which on a volume basis (tons per active farm worker) amounted to 16.3 per cent and on a value basis (per active worker at constant prices) to 1.4 per cent.

It appears that the reduction in per-capita consumption of meat has been offset by larger consumption of certain other staple foods as well as by wider use of poultry, dairy products, fruits, fresh vegetables, wheat flour, potatoes, rice, sugar, and vegetable oils. This is, of course, not to say that Brazilians normally enjoy a balanced and adequate diet. Quite possibly starches are consumed in excessive quantities as compared to other elements, but it is not within the scope of this paper to enter into consideration of the problems of nutrition and dietetics.

It is apropos that "fire" and hoe culture still prevails in a large part of agriculture, that production per active worker is low, and that little has been done to prevent the rapid exhaustion of soils. The 1940 census showed only one tractor for each 4,000 hectares of cultivated land and one plow for each 19 persons engaged in farm work, but there has been some improvement since that time. Yet, along with this rudimentary agriculture, there has developed a mechanized and efficient agriculture that is of increasing importance in the total output. In some of the northern states there was in 1940 only one plow per 6,000 workers in agriculture, but in others the ratio was one plow to each three persons.

It is sometimes argued that agriculture is suffering from the over-expansion of industry and the rapid urbanization of the country. This is of course true at least in the limited and short-range sense that, at a given moment, some planters might put in larger crops if an ample supply of cheap labor were available. It is also true that some families that formerly eked out a precarious existence by subsistence farming are now eking out a precarious existence in the big cities (witness the crowded *favelas*, or shack-towns, that cover the hills around Rio de Janeiro). On the other hand, it is clear that agriculture has expanded and become more diversified in response to the enlarged urban market and that rising farm wages have fostered better agricultural practices. Furthermore, the development of a substantial internal market has been an important factor in bringing a greater degree of stability to agriculture.

The farm population in Brazil is approximately as large as in the United

States. In view of the small proportion of Brazil's land area under cultivation, the expansion of the cultivated area may be expected to absorb part of the population increase. But as farming techniques are improved, a further shift out of agriculture into industry and services may be anticipated.

SKETCH OF INDUSTRIAL EVOLUTION

The growth of industry has been the most significant factor in Brazilian economic development in recent decades. Statistical evidence of this growth and of the present importance of the industrial sector is presented in the appendix (Tables II.1-II.18). At this point we take a retrospective glance at the historic course of industrialization in Brazil and its inter-relationship with developments in general.

Since about 1850 there has been a fairly steady, if at times slow, progress in mechanization and industrialization. The use of mechanical power before that time was of significance chiefly in the sugar industry. From the sixteenth to the eighteenth century the cane was crushed with wooden cylinders (sometimes covered with iron), moved by water or animal power, and the juice cooked in open kettles, which burned wood fuel and resulted in the destruction of the forests.⁷ About 1800 bagasse began to be used as fuel, a change which was particularly important in view of the introduction of steam engines, which first appeared in Pernambuco and Bahia in 1815. A little later vacuum boilers and turbines were introduced, but the establishment of large centrals with improved processes did not get under way until after 1875.

The 1850's and 1860's were a fecund period in Brazilian economic development. With the restoration of political order, foreign trade expanded, the first commercial and industrial corporations were organized, a British bank established branches in the principal cities, the first railway and telegraph lines were built, steam navigation was inaugurated on the Amazon River, and mail steamship connections were established with Europe.⁸ The opening of the British-built railway line from the port of Santos to São Paulo in 1867 marked an important milestone in the economic progress of Brazil. This date signalizes the beginning of the great expansion of population and production in the state of São Paulo and contiguous areas. By the end of the Empire (1889) about 10,000 kilometers of railway had been opened.

These developments set the stage for the first significant period of industrialization in Brazil, aided and abetted by the higher import duties that were levied in 1844 following the expiration of the British treaty of

⁷ It is estimated that 50,000 of these antiquated installations are still in use in Brazil. Of these, about 30,000 are in the state of Minas Gerais.

⁸ These decades are closely associated with the name of Mauá, an orphan who became the most influential banker in South America. He built the first railway in Brazil, promoted the first submarine cable, organized gas lighting and horse cars in Rio de Janeiro, created ports, and introduced steamships to the Amazon. He was interested in a textile mill, and developed a foundry and shipbuilding yards.

1827, which had tied the hands of the Brazilian government in tariff matters. The cotton textile industry was the first to respond to the new inducements. British trading firms, some of which had long been established in the country (Mauá was a protégé of one), were active in setting up mills and in providing machinery, managers, and workmen. At this time the northeastern states were the most populous and wealthy portions of the country and also were the chief centers of cotton production. It is not surprising, therefore, to find that in 1866 Bahia had five of the nine textile mills in operation, there being two in Rio de Janeiro, one in Minas Gerais, and one in Alagoas. By 1875 there were 29 mills, of which ten were in Bahia, six in São Paulo, five in Rio de Janeiro, five in Minas, one in Maranhão, one in Pernambuco, and one in Alagoas. In 1881 Bahia had twelve mills but was far behind Rio de Janeiro in the number of spindles and looms. The Federal District was in third place and São Paulo in fourth. By 1915 São Paulo was in first place, with the Federal District second. During the nineteenth century, and particularly during the second half of the century, the center of economic gravity shifted from the North to the southeastern states. The North, too, found new sources of wealth, in expanding cacao and rubber production, in a temporary cotton boom in the 1870's, and in the establishment of a considerable number of small industries. Population also continued to expand, chiefly through natural increase (although there was a considerable influx of Portuguese, and lesser numbers of other nationalities, into the Amazon valley and coastal cities), but the per-capita productivity and purchasing power was considerably lower than in the south-southeastern tier of states.

The course of industrial development up to 1920 is indicated by tables in the 1920 census showing the years of founding of the 13,336 establishments in existence at that time. These data show that of the total capital invested in industry, 24.2 per cent was in plants established between 1915 and 1919, 36.9 per cent in plants established between 1900 and 1914, 16.8 per cent between 1890 and 1899, 11.2 per cent in the years 1885-89, and 9.6 per cent before 1885 (date of investment of 1.3 per cent unknown). These figures, as well as other data, indicate that the first important wave of industrialism came in the last years of the monarchy, along with a general economic advance: (1) coffee exports were increasing rapidly, at good prices; (2) exports of cacao and rubber showed a sharp upward turn; (3) this was a period of world prosperity; (4) railway construction proceeded vigorously; (5) Brazilian credit in Europe was good, convertible notes rose above par, and several large sterling loans were floated; (6) immigration increased, reaching a high point of 133,000 arrivals in 1888, a peak not exceeded except in a few subsequent years; (7) the import tariff of 1879 granted additional protection to industry, and this policy was confirmed by the tariff of 1888, as well as by legislation granting duty exemption on certain industrial equipment and raw materials.

The abolition of slavery (1888) and the fall of the Empire (1889) created a temporary outburst of optimism among the commercial and industrial classes that had helped to shape events, launching a tremendous inflationary boom. During the last eighteen months of the Empire the capital of newly incorporated banks and companies equaled the aggregate capital of all banks and companies in existence previously, and during the first year of the Republic new capital subscriptions again more than doubled the previous totals. Panic ensued at the end of 1891, and many companies failed. Heavy budgetary deficits and rapid increase of currency in circulation caused a drastic depreciation of the sterling exchange rate. The abolition of slavery gave the coup de grace to the already declining coffee industry in the Paraíba Valley and in some of the older coffee regions. The situation was aggravated by the downswing of the business cycle in Europe and the United States. Nevertheless, coffee planting and exports and also immigration continued at high levels during most of the last decade of the century. Coffee stocks accumulated in 1896 and prices weakened, but this was partly offset by higher returns from rubber and some other products.

The industrial expansion about the turn of the century was not limited to the cotton textile industry. A jute mill was established at São Paulo in 1889 to take advantage of the huge demand for coffee and grain bags, and a number of small woolen, silk, and linen mills appeared. In the food branch, sugar centrals and refineries were established, flour mills erected in the chief ports, food-canning plants opened, and miscellaneous establishments began producing such articles as biscuits and macaroni. The beer, wine, and beverage industries expanded. The 1907 industrial survey showed the distribution of operatives by some leading industries, as follows: tobacco, 7,407; foundries and metal-working, 6,861; tanning, 1,967; shoes, 7,379; matches, 3,969; men's hats, 3,105; ceramics, 2,553; soap and candles, 1,763; salt, 2,146; glass, 1,328; and paper, 606. Machines to hull, clean, and treat coffee beans were designed and built at São Paulo, an American playing an important part in this development.

During the present century there have been several periods of exceptionally rapid industrial expansion: 1901-12, 1915-23, and 1941 to date. Beginning in 1899 (and continuing until 1934) the government, by collecting part of the import duties in gold, thus afforded stiffer protection, while at the same time the appreciation of the milreis (as the unit of currency was called before 1942) enabled manufacturers to import machinery on better terms.

During the early 1900's there developed an overproduction of coffee and a lowering of prices. From 1902 to 1908 the net immigration balance was only 11,000, owing to heavy repatriations. But these developments were not entirely unfavorable for industry, which enjoyed an exceptional period of expansion up to 1913. The lack of employment on the fazendas made labor more readily available at the factories. Generally speaking,

only those immigrants whose passage had been paid by the federal or state government went to the farms, most of the spontaneous or nonsubsidized immigrants electing to remain in the cities. The development of electric power, the accelerated rate of railway construction, and a heavy inflow of foreign capital had notable effects. Large American and European machinery manufacturers established branches in Brazil to service equipment. The entry of a prominent shoe-machinery house and of the leading sewing-machine concern provided the necessary stimuli for the creation of an important shoe-manufacturing industry.

The years 1912 and 1913, a time of nervousness, declining prices, and credit restriction in Europe, brought a downswing in Brazil. The textile industry developed its first crisis of overproduction of coarse cottons, and some spinners and weavers turned to higher-count yarns and finer materials. The first war year was also a difficult period, but from 1915 to 1920 industry blossomed. Scarcity of goods and of shipping eliminated foreign competition, and many new industries were founded to supply goods no longer available from abroad or to meet overseas demands. The inflationary effects of war financing created new purchasing power. Above all, the psychology of war stimulated national consciousness and rallied public opinion to the industrial cause. Wartime profits from shipping, trading, and manufacturing were devoted to the creation or expansion of industries. The pattern of World War II was essentially similar, although on a larger scale, and furthermore at that time industrialization received the moral and financial backing of the United States government.

The early 1920's were difficult, owing to price declines for raw materials and depression abroad. Furthermore, the policies of President Arthur Bernardes (1922-26) were probably excessively deflationary. War-born industries, producing inferior goods at high prices, found the public avid for better quality European and American merchandise. But large foreign loans, the revival of immigration, the establishment of branch factories by a number of important American manufacturers, the highway program of President Washington Luis, and the interest aroused by the possibilities of aviation directly or indirectly helped to enlarge the industrial sector. Brazil, like other countries, felt the scourge of the world-wide depression of the 1930's, but the latter half of the decade, at least, witnessed further expansion of the industrial sector. The shortage of exchange raised effective barriers to imports and further strengthened the motivation of the industry-conscious groups.

The textile industry suffered during the late 1920's and early 1930's from the effects of overexpansion during the war and early postwar years, plus the revival of competition from imports. The output of cotton and worsted cloth reached peaks in 1924 and 1927-28, respectively, that were not surpassed until 1937. In 1929 import duties on cotton goods were increased sharply, including the finer types of fabrics, and in 1931 duties were raised on woollens and restrictions imposed on imports of textile

machinery designed to expand existing capacity. These measures plus exchange restrictions cut imports drastically, and assured prosperity to the established mills, many of which turned to the spinning of higher-count yarns, weaving of finer fabrics, and the improvement of facilities for bleaching, finishing, mercerizing, dyeing, and printing. The knit-goods industry also expanded.

At the time of the 1920 census most manufacturing operations were of a relatively simple type, such as foundries and machine shops, saw-mills, tanneries, and factories making earthenware, glassware, cheap wrapping paper, matches, soap, cigarettes, toilet and pharmaceutical products, and some types of furniture and wearing apparel. Some of the most important firms now active in Brazil were already in existence at that time, notably in the textile branch, but many of the larger and more significant present-day establishments were founded during the 1920's or subsequently. The 1920's saw the rise of the steel, automobile-assembly, electrical-appliance, tire, cement, rayon, and corn-products industries. The next decade was less notable from the standpoint of basic new industries, although the variety of chemicals, metal products, and prepared foodstuffs made in Brazil increased. The flour-milling industry expanded, new rayon plants began operations, and the manufacture of some of the better quality textile products previously imported was begun. As cotton planting increased, the number of gins and oil mills expanded, and the preparation of vegetable shortening was launched. The paper industry expanded and improved its product, using larger amounts of imported pulp. Among the major events of the 1940's was the inauguration of the Volta Redonda steel plant, the Monte Alegre wood pulp mill, several important plants making railway cars and various types of industrial equipment, and factories manufacturing bicycle tires, flat glass, insecticides, and fertilizers.

Some indication of the industrial expansion during the periods 1930-40 and 1940-50 is given in Table II.10. It will be noted that the rate of growth has been most notable in the relatively new industries like steel and wood pulp. The growth of the cotton textile industry has been at a much slower rate, and the same is probably true for such older industries as leather and shoes and various foodstuffs items. There appears to have been a big expansion in the production of beer, cigarettes, and matches but strictly comparable data are not readily available.

We may conclude this brief sketch of industrial evolution by indicating the chief characteristics of the present stage of industrialization in Brazil.

1. Production is concentrated primarily in the field of consumer goods. The textile, apparel, and food industries account for 42 per cent of the total value added by manufacture in all industries as compared to 23 per cent for the same groups in the United States. At the same time the relative importance of these groups has declined since 1919, owing chiefly to the growth of the metal-working and construction groups (see Table II. 9). Local plants supply practically the entire consumption of all con-

sumer goods of general use, and a substantial proportion of other types of goods.

2. In some respects, Brazil is still in the "quantitative" stage of industrialization, since the bulk of the output consists of articles of low grades but reasonably satisfactory to consumers having on the average a low per-capita income. As the broadening distribution of wealth has created wider markets for articles of better quality and higher price, and as over-production of the common grades has developed, manufacture has begun of types of goods (such as cotton cloth) not previously produced. Branches of foreign concerns manufacturing trade-marked goods attempt to maintain the same quality of product as in the United States.

3. A substantial start has been made with heavy industry: integrated iron and steel plants, metal-working, cement, and some industrial chemicals. The range of simpler types of machines made in Brazil is considerable and expanding.

4. Capital goods comprise the major item in Brazil's import trade, while imports of manufactured goods for direct consumer consumption are relatively small. In 1950, for example, on the basis of preliminary foreign trade returns, machinery, tools, and transportation equipment (including automobiles) accounted for 36 per cent of the total value of imports; basic steel products and nonferrous bars, sheets, and primary shapes, 7.5 per cent; fuel, 14 per cent; prime materials, 10 per cent; and foodstuffs and beverages, 17 per cent. The remainder, 15.5 per cent, consisted of consumer goods plus manufactured goods used in further manufacture or in construction, such as alkalis, nitrates, superphosphates, newsprint, and cement.

Manufactures and semimanufactures comprised only a small proportion of exports in 1950. Finished manufactures, consisting chiefly of cotton cloth and chemical and steel products, valued at \$15 million, accounted for only 1.14 per cent of the total value of exports. Manufactured foodstuffs (sugar, meat, and manioc products), valued at \$16 million, comprised 1.3 per cent, and semimanufactures (cotton yarn, vegetable oils, starch, menthol), valued at \$23.4 million, added another 1.88 per cent. The overwhelming proportion of exports consisted of food products and raw materials.

5. Brazil imports most of the machinery used in industry. Scientific and technological research is still relatively limited. Generally speaking, the "know-how" to start new types of industries must come from abroad in the form of machines, formulas, technicians, production managers, etc.

6. In Brazil, as in other countries, the onset of the industrial revolution has had the effect of stimulating rapid increase of population and urbanization. The population rose from 41.2 million in 1940 to 52.6 million in 1950, while the density per square kilometer rose from 4.87 to 6.22. In Brazil, as in other Latin-American countries and to a considerable extent in France, well-developed urban life existed before indus-

trialization—a result of political and social influences. In Brazil, after the establishment of the Empire, landed proprietors were encouraged to take up residence at the Court, and furthermore many freed slaves and persons of mixed blood flocked to the national or provincial capitals in search of opportunities. Nevertheless, industrialization has accelerated this trend. According to the 1950 census, 36 per cent of the population lived in cities or towns (*ciudades* and *vilas*) and 27 per cent lived in urban communities of over 5,000 inhabitants. The 1950 census showed two cities with populations of over a million (Rio de Janeiro, 2.4 million; São Paulo, 2 million), seven others having over 200,000 inhabitants, and 99 places with a population between 20,000 and 200,000.

FACTORS IN INDUSTRIAL GROWTH

General Notes

The experience of Brazil indicates that industrialization of some depth and breadth is not the creation of any single factor or circumstance, but arises from the favorable conjunction of various factors. Over the long run industry tends to develop and flourish in a region where other economic indices are favorable, but at any given moment the initial impetus may come from an unfavorable turn in other sectors. The course of particular industries may, however, be determined by only one factor, e.g., available raw material, provided other circumstances are not unduly adverse.

Among the earliest mechanized plants, as has been seen, were those in materials-oriented industries, such as sugar mills, coffee depulping and cleansing mills, and primitive corn and mandioca mills moved by water power. A few market-oriented industries, such as bakeries, inevitably appeared, and the construction of railways called for foundries and repair shops.

The rationale of the light consumer-goods industries is more complicated. The textile industry has been, in a sense, the creature of protective tariffs, since it seems unlikely that the industry could have originated or survived without the help of fairly stiff protection. Brazilian textiles have been able to compete in foreign markets only under abnormal circumstances, such as wartime scarcities. *Prima facie*, Brazil has some important advantages, such as low wage rates, native growths of cotton, and a large market near at hand, but these have been more than offset by other factors that keep costs high, such as high transport costs for raw materials and finished products, higher costs of equipment and chemicals than in older industrialized countries, relatively inefficient labor, large profit expectations, and unprogressive management. It has long been fashionable to attribute the deficiencies of the industry to its obsolescent equipment,⁹

⁹ For example, a member of an international cotton mission that visited Brazil in 1921 reported Platt Bros. 1871 machines still at work (Arno S. Pearse, *Brazilian Cotton*, p. 29).

but a recent report by the United Nations Economic Commission for Latin America concludes that the principal reason for the low productivity in Brazil is not the lack of modern equipment (although that is very important, too, in some of the older mills) but the poor organization and administration of the factories.¹⁰ Most of the present deficiencies could be corrected at relatively small cost, whereas complete modernization of the Brazilian mills would cost about \$350 million.

This report also criticized some other popular misconceptions, such as the claim that the small size of the plants and the lack of specialization are major factors in raising costs. The experts found that size is not an important factor in Brazil, since most of the national output comes from large mills, and furthermore that the relative lack of specialization is much less important than the lack of standardization.

The report summarizes the causes of low productivity that may be remedied without important investment, as follows: (1) excess personnel; (2) defective manufacturing conditions, such as poor maintenance, bad lighting, inadequate cleaning of rooms and machinery, lack of control of humidity, and, in the weaving mills, poor quality of yarn; and (3) lack of specialization, principally in weaving operations. By far the most important is the use of superfluous labor. One reason for this is the low level of wages in relation to the price of finished cloth. In Brazil wages average Cr. 4.63 per man-hour while the price of cloth is Cr. 7.67 per meter (a ratio of 0.60); in the United States, wages are calculated at \$0.982 per man-hour and the price of cloth at \$0.276 per meter (a ratio of 3.55). Traditional employer-employee relations are also a factor. Some of the largest factories are far from the cities and form distinct communities entirely dependent on employment in the mills. Children begin work in the factories at an early age, or are put in the textile schools. There is relatively little mobility among the workers.

Although the report places chief emphasis at this stage of development on the need for improved administration, it is recognized that modernization of the older mills would result in great increase in output. Brazilian mill owners have made substantial purchases of new equipment in recent years, chiefly from the United States, although Great Britain and Switzerland have shared in this business. Most of the new machinery has been for expansion rather than replacement. Of the hundred thousand looms operating at the end of the war, less than 500 were automatic. It is estimated that 8,000 additional automatic looms have been installed, of which 6,000 are for single shuttle cotton work.

There have been two major stages in the development of the Brazilian iron and steel industry. The first was the establishment in 1921 of the first integrated iron and steel operation, with charcoal blast furnaces, by the Belgo-Mineira company, an affiliate of Arbed, the Luxembourg steel

¹⁰ *Productividad de la Mano de Obra en la Industria Textil Aldogonera de Cinco Paises Latinoamericanos* (New York, 1951).

combine. Although small quantities of pig iron had been produced earlier for use by foundries and machine shops, this marked the beginning of steel production. During the interwar period a number of additional charcoal furnaces as well as electric furnaces operating with scrap were inaugurated. The next important stage was the construction of the National Steel Works at Volta Redonda during World War II. This development was significant both on account of the size of the plant and the fact that its blast furnace burns coke.

The establishment of the Volta Redonda plant was undoubtedly hastened by circumstances arising out of World War II, just as the organization of the Belgo-Mineira company grew out of World War I and the desire of military authorities to have a source of steel that would not be interrupted by war. Ever since American geologists revealed, during the first decade of the century, the existence of large iron ore and coal deposits in Brazil, the desire to possess an iron and steel industry has been a national aspiration. National sentiment cannot be analyzed in economic terms alone, but competent foreign metallurgists see economic justifications for a modern integrated iron and steel works in Brazil. Although Brazil is now producing about 600,000 tons of basic steel products annually, imports of 250,000 to 300,000 tons are needed. For some time to come increased local production will probably barely keep up with rising consumption. Consumption of steel has doubled in the last decade and may be expected to double again by 1960. Current per-capita consumption is about 50 pounds per year, one-twentieth of United States consumption. At present the markets at Rio de Janeiro and São Paulo account for about 90 per cent of the total steel consumption. Although the cost of locally produced steel is likely to average higher than prices of imported steel for some time to come, the availability of domestic steel affords a safeguard against exorbitant prices in times of scarcity and also assurance of minimum needs. Several local steel-using industries have been stimulated by the establishment of the Volta Redonda plant, as well as new chemical industries and a cement plant utilizing its by-products.

The further development of the iron and steel industry depends primarily on two factors: fuel and transportation. Coke from national coal has very high ash content; furthermore, Brazil does not produce sufficient coal of metallurgical grade to supply requirements. As natural forests are destroyed, charcoal becomes more expensive and longer haulage increases the strain on the already overloaded facilities. One of three possible solutions, or some combinations thereof, are indicated: (1) It has been proposed that blast furnaces be erected at a suitable port to use imported coal or coke. To reduce freight costs, ships bringing coal would load iron ore for the return voyage. São Paulo interests have a specific plan for a plant at Santos. This plan undoubtedly has much to recommend it and is in line with proposals made by various foreign companies over a period of forty years. (2) Granted the advisability of a tidewater plant,

there is also need for iron and steel production in regions that could not be economically served by a Santos or Rio mill, and that furthermore would not be subject to stoppage in case imported coal supplies were cut off. This need could be met in part by improvement of the existing coal production operation and in part by the development of blast furnaces using charcoal from plantations of rapidly growing trees such as eucalyptus. Costs could be reduced through mechanized handling of wood, reduced transport costs, and greater efficiency through the use of modern charcoal plants. The suitability of eucalyptus charcoal for blast furnaces has been tested on a small scale, but the commercial feasibility of the proposal needs further investigation. (3) The use of electric furnaces also offers an eventual alternative, but at present there is a serious deficiency of electric power production in Brazil.

An important phase of Brazilian industrialization is represented by the establishment of branch factories by United States manufacturers, beginning in a significant way in the 1920's, and including such articles as electrical equipment, tires, motor-car assembly, pharmaceuticals and toilet goods, razor blades and holders, and paper bags. The first phase of this movement has been examined carefully by Dr. Dudley Maynard Phelps.¹¹ For our purpose it will be sufficient to emphasize the effect of the war in setting in motion the forces that led to the branch-factory movement. Since World War II the high income-tax rates in the United States have made the possibility of tax savings on foreign operations an important inducement. In some cases the decision to establish a branch plant has been precipitated by changes in the Brazilian import tariff favoring imports of raw materials or semimanufactures but penalizing imports of the finished manufacture. In such cases the United States manufacturer has had to face the possibility of exclusion from the Brazilian market unless he were prepared to undertake manufacture or assembly in the country.

At an early period British and Continental European investors had been interested in some types of industry. The British, for example, established flour mills, gins, textile, match, tobacco, and shoe factories, gas works, and railway and tramway shops. Resident Germans developed various industries, such as brewing, cigar manufacture, and pencil, brush, paper, and furniture manufacture, but these have become nationalized and may be considered as immigrant enterprises. French capital was interested in sugar mills, tanneries, chemicals, pharmaceutical and cosmetic products, and ink. Belgians were interested in textiles. Canadians built a cement plant. Furthermore, the repair shops of the Canadian-registered and controlled power companies developed into fairly important metal-working operations, especially during the war years. Some of these earlier operations have been Brazilianized, but there have been some new European investments in manufacturing operations, as in rayon, tires, cast-iron and steel pipe, and tobacco.

¹¹ *Migration of Industry to South America* (New York, 1936).

The first branch of a United States company was a shop installed near Rio de Janeiro in 1912 for the maintenance and construction of railway passenger coaches and freight cars, although machinery manufacturers had established sales and servicing organizations earlier. By 1936 there were some twenty important American-controlled branch plants in Brazil, including three automotive assembly plants, electrical equipment, cement, razor blades, corn products, yeast, paper bags, and miscellaneous pharmaceutical and toilet lines. The list has subsequently been enlarged to include paint, metal-working, glass, ice cream, numerous chemical products, signaling and radio-transmitting equipment, radio-receiver assembly, tires and tubes, copper wire and cable, steel drums, time clocks, margarine, sewing-machine assembly, water pipe, plastics, fertilizer, insecticide, lenses, steel buses, starch, tapioca flake and pearl, baking powder and miscellaneous food products, abrasives, and men's clothing. These plants have played an important role by introducing the most advanced technology, broadening the range of manufacturing, enlisting the interest of local investors, stimulating interest in industrialization and in training workers and administrative personnel.

In recent years a large part of the new developments have been in the nature of assembly operations—car construction, motor vehicles, electrical apparatus and equipment, clocks, apparel, and sewing machines. Both in the United States and in the United Kingdom the trend toward larger plants and intensity of investment has appeared most clearly in connection with assembly industries, since it is in such operations that highly specialized machines can be used to best advantage.¹² But these techniques were developed with a view to highly specialized production for mass markets, and are not always adaptable to output on a more limited scale. Hence costs of production of these types of goods are almost always higher in Brazil than in the United States or Britain. An important part of the assembly operations in Brazil are carried on in branch plants of United States firms or by companies having foreign affiliations. One large American company having branch factories in various parts of the world estimates that its unit manufacturing costs abroad are between 1.2 and 1.7 times those of comparable articles produced in its United States factories.¹³ The ratio for Brazil is not shown separately, but presumably falls between 1.2 and 1.7. This analysis relates to normal or long-run factors, in which the relationship between the size of the market and the amount of investment required for efficient production is of considerable importance. Under present conditions of world-wide scarcities the emphasis shifts to more immediate problems, such as the unsettled raw-materials markets and the uncertainties regarding supplies of equipment, spare parts, and power.

¹² Philip Sargent Florence, *Investment, Location, and Size of Plant* (Cambridge, 1948), chap. v.

¹³ For a discussion of the factors entering into these higher costs, see George Wythe, *Industry in Latin America* (2d ed., New York, 1949), especially pp. 369-371.

Foreign-owned retail establishments have also contributed to industrialization. During World War I, British houses arranged for local production of some items that could not be obtained abroad. More recently this has been carried much further by American interests, such as the Iejas Americanas and Sears, Roebuck and Company.¹⁴ The activities of the International Basic Economy Corporation, originally confined to agriculture, now include several manufacturing operations.

The list of United States firms that have established branch operations in Brazil or have participated technically or financially with Brazilian interests is constantly expanding. Some of these involve assembly operations chiefly but others represent fairly advanced manufacture. Some fields of activity are closed by law or administrative action to foreign investment, such as petroleum refining, and others have in effect been reserved to Brazilian control.

The construction industry also deserves special mention. Construction and the construction materials industries have expanded greatly since the late 1930's. Stimulated by the inflationary rise in prices and the rapid growth in population of the chief cities during the war years, building of apartment houses, skyscraper office buildings, and residential suburbs reached boom proportions in the 1940's, and has since continued actively although on a somewhat reduced scale. It is estimated that building accounted for 56.4 per cent of private gross-capital formation in 1945 and 31.5 per cent in 1950.¹⁵ Such concentration of investment potential has been judged by some observers as a "serious distortion."¹⁶ It is true that the boom had highly speculative aspects, not unlike buying oilwell percentages in Texas, but there is no evidence that it seriously retarded industrial development—in fact, it stimulated some industries. The speculation mobilized some funds that would probably otherwise have been spent on personal consumption. A considerable part of the total amount of construction consisted of factory buildings and workers' housing. Furthermore, the office buildings and apartment houses were needed.

Urbanization has also given rise to increased demand for water and sewage disposal pipe. Since 1949, 10 per cent of the federal income tax receipts has been allocated to the states and municipalities for sanitation. Two cast-iron-pipe plants have been in operation for some years, but the expanded demand for pipe is bringing about a financial and technical reorganization of the business. The French Pont-à-Mousson interests have acquired control of the plant at Barbará, adjoining Volta Redonda, and plan to make sufficient investment to increase its capacity and efficiency.

¹⁴ According to Charles A. Meyer, Foreign Administration, Sears, Roebuck and Company, about 95 per cent of all merchandise sold in their stores, considered unit-wise, is produced in Brazil.

¹⁵ Economic Commission for Latin America, *Recent Developments and Trends in the Brazilian Economy* (United Nations, May, 1951), p. 36.

¹⁶ *Report of the Joint Brazil-United States Technical Commission* (Washington, 1949), pp. 8-9.

Annual production of pipe under 30" by the two Brazilian mills has risen from 13,700 metric tons in 1940 to 30,300 tons in 1950, but additional imports are required.

The Market

A genuinely national market can hardly be said to exist in Brazil today, because of deficiencies of transportation and the obstacles imposed by taxes and other handicaps on interstate movements of goods. For these reasons the early textile mills, for example, catered almost exclusively to regional markets. Until recently the only possibility of interregional connections was by coastal shipping, which was and is slow, expensive, and subject to heavy loss from breakage and pilferage. Airlines and highways have improved the distribution of some commodities, and some interstate barriers have been overcome. Hence some manufactured articles such as cotton goods, shoes, cigarettes, drugs, and pottery are now distributed throughout the country. Furthermore, São Paulo manufacturers, as the result of wartime scarcities and official policies, now draw a substantial part of such raw materials as long-staple cotton, crude rubber, oil nuts, and jute from the northern states.

A large part of Brazilian industry has been concentrated in plants supplying low-grade articles of common consumption. Within recent decades there have been important accessions to those income groups that can afford to purchase a wider variety and higher quality of merchandise. The importance of the market factor is suggested by the shifts in geographic distribution of manufacturing industries revealed by the censuses.

In the early period of industrialization the Federal District (Rio de Janeiro and adjacent areas) was the chief center. The main factor affecting location at that time was the market, since Rio had the largest concentration of purchasing power and also had the best transportation connections with railways and coastal shipping. Rio was also the chief port of entry for imported equipment and raw materials, and a convenient point to recruit labor. In 1907, 23 per cent of the industrial workers were in industries of the Federal District and 9 per cent in the state of Rio de Janeiro, whereas the state of São Paulo had only 16 per cent. Within a few years, however, São Paulo had forged ahead, and by 1920 São Paulo State had 34 per cent of the workers as against 31 per cent for the Federal District and the state of Rio de Janeiro combined. The other leading states in 1920 were Rio Grande do Sul (meat packing, flour milling, other food products, and various small wood, leather, and metal-working industries), Pernambuco (chiefly textiles and sugar), Minas Gerais (textiles, sugar, ceramics), and Bahia (textiles, apparel, and food products).

Returns from the 1950 census showing geographic distribution are not yet available, but the survey for 1949 made by the Industrial Workers Social Security Institute (I.A.P.I.) shows a heavy concentration in the southern states. On the basis of gross value of products, the four states

of São Paulo, Rio de Janeiro, Minas Gerais, and Rio Grande do Sul, plus the Federal District, accounted for 85 per cent, as against 76 per cent in 1920. The rapid rise of the state of São Paulo to industrial pre-eminence stands out clearly: its share was 31 per cent in 1920, 44 per cent in 1939, and 50 per cent in 1949. All the other important states have lost ground relatively although they, too, have made gains in absolute terms. The Federal District comes second, with 16 per cent, Rio Grande do Sul third (8 per cent), Rio de Janeiro fourth (5 per cent), and Minas Gerais fifth (5 per cent). Next in importance is the northeastern state of Pernambuco (4 per cent), with its sugar mills and textile factories. It is estimated that 78 per cent of the workers and employees in manufacturing industries are located within the 100-kilometer wide coastal belt, a strip that embraces only 6 per cent of the territory of the nation. Within this area 82 per cent of the wages and salaries are disbursed.

The Rio-Minas-São Paulo triangle has long been the economic and political heartland of Brazil. Since about 1930 Rio Grande do Sul has risen in the scale, politically and economically, but industrial expansion has been held back by fuel and power shortages. The completion of power projects in the Northeast may also be expected to stimulate industrial development in that area, especially in the elaboration of native products of that region. At the same time São Paulo's relative importance industrially may be expected to increase, rather than decline, in the next decade or two. It embraces the richest market. The *Paulistas* have shown a self-confident, aggressive spirit of enterprise, which is supported by a rich agricultural hinterland, a favorable situation with relation to markets and transportation connections, water power, and a relatively high-grade labor force including many first- and second-generation immigrants.

The national income estimate for 1949, given in Table II. 3, averages Cr. 3,408 (\$184) per capita on the basis of a population of 50 million. The low per-capita national income of Brazil tends to obscure the comparatively high purchasing power of considerable segments of the population. With the exception of about 100,000 living in a primitive tribal fashion, there are practically none who do not use some manufactured article, even if only a knife or hoe. Some native cotton is still spun by hand and woven on hand looms, but most Brazilians use some machine-made cloth. The making of leather articles, including shoes, is still a handicraft in many parts of the country, but the cobbler utilizes some findings from a factory.

The available income and fiscal data are inadequate to provide much basis for estimating the size of various income groups, but at a rough guess it may be said that about one million Brazilians are well-to-do and another million live comfortably. There are several million more in the lower-middle class.

The 1940 census showed 4.8 million persons working for their own account, of whom 3.3 million were in agriculture or animal husbandry.

This group probably included some poor sharecroppers but it also embraced a substantial number who did well. Eighty-five per cent of the coffee farms in the state of São Paulo were family-sized farms. A large part of the cotton crop is grown by small farmers who use no labor except that of members of the family. The Japanese and Brazilian vegetable gardeners who supply the growing urban markets are not badly off. Since 1920 there has been a significant increase in the number of farm tenants paying cash rents as well as of share tenants furnishing their own equipment. Many of the hired agricultural laborers are shiftless, but most are able to accumulate enough to buy the things nearest to their heart's desire.

The 1950 census showed 1,492,884 persons engaged in industry in that year, of whom 1,256,807 were operatives, 133,099 were office workers, and 102,978 in "administration." The operatives were paid 12.4 billion cruzeiros in 1949, or approximately 10,000 cruzeiros (say \$500) each, on the average, which includes women and minors. Since there is more than one wage earner in most families, it is clear that the industrial group has some purchasing power for manufactured articles of the simple type. The per-capita purchasing power of skilled workers and "administratives" is obviously much higher.

The size of the market is in part determined by the price of the finished article to the consumer. Greater efficiency in manufacture and distribution would make possible a much wider outlet for many articles.

Generally speaking, unit manufacturing and internal transport costs are too high to afford much expectation of export markets in the near future, except under abnormal market conditions. Brazil's natural resources in forests, indigenous plants, and in some minerals and animal products are such that the country should be able to capture the world market in some manufactured or semimanufactured articles based on those resources, provided other factors are favorable.

Transportation

"The inadequacy of transport is a refrain that runs through all discussions of economic problems in Brazil. Inadequate it is, and well-planned improvements of the railway, highway, and coastal shipping operations should receive a high priority in any economic program. At the same time, inadequate transport is sometimes blamed for difficulties that have their real roots elsewhere. Or, at least, transport problems have their roots in the same soil as several other serious economic and social problems."¹⁷ In other words, Brazilian transport shares the characteristics of agriculture and industry. At its best, such as the *Paulista* railway, it is excellent, but on the average is costly and inefficient. The deficiencies of transport stand out conspicuously because of its key position.

¹⁷ Quoted from Wythe, Wight, and Midkiff, *Brazil: An Expanding Economy* (New York, 1949), chap. viii.

At various periods favorable developments in connection with transportation have had far-reaching effects, such as the opening of the Santos-São Paulo railway. Two of the most active periods of industrialization, 1884-88 and 1907-14, coincided with periods when the annual average of new railway mileage completed was at peak levels.

Railway line in operation by ten-year intervals since 1890 has been as follows (in kilometers):

1890— 9,973	1920—28,535	1940—34,252
1900—15,316	1930—32,478	1950—36,681
1910—21,326		

Brazilian railways are handicapped by various administrative and technical deficiencies. The strong spirit of federalism and state rights that has prevailed under the republic has resulted in a series of disconnected state systems that are frequently illogical from the standpoint of economics. Different gauges and outmoded equipment prevent exchange of cars between lines and result in much reloading. The technical characteristics of some of the lines—grade, curves, bridges, etc.—keep the average weight and speed of trains very low.

Despite these shortcomings, sufficient improvement has been effected to enable the railways to increase traffic handled more rapidly than mileage of lines. Heavy industry such as the National Steel Works has, however, been forced to move a large part of its products as well as part of its raw materials by truck. Much of the new railway mileage of the last decade has been meter-gauge line in sparsely settled territory, such as the line connecting the Central Railway with the railway net in the state of Bahia.

During the administration of Washington Luis (1926-30) a good-roads movement gained momentum, but highway construction was neglected during the fifteen-year regime of Getulio Vargas (1930-45). President Dutra (1946-51) revived it, but the mileage of paved highway is low.

Brazil has a very extensive and generally satisfactory air-transport system, which greatly facilitates passenger movement and also shipment of light cargo. Coastwise shipping leaves much to be desired but provides the chief link between the northern and southern parts of the country. In 1946 the coastwise traffic amounted to 4 million tons, of which 45 per cent was foodstuffs (salt and sugar being the chief items). Pine lumber from Paraná and coal from Santa Catarina are also large items. Coastal vessels also handle raw materials from the North—cotton, jute, rubber, oilseeds, tobacco and cacao, and take in return manufactured products from São Paulo, Rio de Janeiro, and Rio Grande do Sul. Unfortunately costs are high and delays and pilferage abound. In 1947, when the matter was investigated on the spot, it cost twice as much to ship jute from the Amazon to the consuming centers in southern Brazil as it did to ship jute from India to the factories in São Paulo.

In transportation, as in other matters, the state of São Paulo has frequently taken the lead. It has been fortunate in that its terrain presents fewer difficulties than that of most other sections of Brazil. The principal problem, getting over the Serra do Mar, was achieved by a British company about a century ago.

The development of Brazil's petroleum resources would give a great fillip to the development of highway transport.

The importance of efficient and economical transportation to the further industrial growth of Brazil can hardly be overemphasized. The importance of this is sometimes overlooked, although favorable transport conditions were basic to the industrial revolution in Europe and hardly less so in the United States. Furthermore the deficiencies of transportation and distribution facilities are perhaps even more conspicuous in the case of foodstuffs. It is therefore encouraging that transportation was given the highest priority by the Brazil-United States Joint Commission for Economic Development, which was formally inaugurated July 19, 1951.

Fuel and Power

Brazil's utilization of mechanical energy from all sources is very low. Estimates published in 1939 showed a daily production in energy in Brazil of 0.47 kilowatt-hour per-capita, as compared to 10 kw. in the United States. Wood is the chief source of energy in Brazil, as will be seen from the following table:

BRAZIL: ESTIMATED ENERGY CONSUMPTION, 1946

	THOUSAND TONS	CALORIES PER TON	MILLIONS OF CALORIES	PER CENT OF TOTAL
Firewood.....	50,000	4,000	200,000	82.0
Coal of national origin.....	1,879	5,000	9,395	3.9
Imported coal.....	1,071	7,000	7,497	3.1
Gasoline.....	624	11,000	6,864	2.8
Diesel & fuel oil.....	810	10,500	8,505	3.4
Motor alcohol.....	102	7,000	714	0.3
Gasoline of national origin.....	8.7	10,500	91	0.04
Charcoal.....	1,000	7,000	7,000	2.86
Hydroelectric power consumed.....	.....	861	3,875	1.60
Total.....			243,941	100.00

SOURCE: *The Salte Plan: Energy Sector*, p. F-2. This estimate apparently makes no allowance for consumption of bagasse by sugar centrals.

It will be noted that imported fuels in the form of coal and petroleum derivatives accounted for 9.3 per cent of total energy consumed.

Of national fuels, firewood is widely used by the railways and by small power plants throughout the country. One of the largest manufacturing establishments in the state of Rio Grande do Sul, with over 4,000 employees, relies entirely on wood-fired power plants. This company owns a eucalyptus plantation of 10,000 hectares.

There are 32 charcoal-burning blast furnaces with a charcoal consumption of about 450,000 tons annually. Charcoal is also used in gas engines and for cooking. Most of the firewood and charcoal is derived from natural forests, although two railways in the state of São Paulo and a few industrial establishments have plantations. The cost of wood has risen as the nearby forests are cut over.

Brazilian coal production first became important during World War I, owing to shortages caused by lack of shipping to bring in imported coal. Thereafter the industry received assistance through government loans, tax exemptions, tariff protection, and, after 1931, a requirement that the railways and public utilities purchase a stated proportion of their consumption from local coal producers. In recent years production has averaged about 1.4 million tons on a cleaned basis, and imports run around 1.0 million tons. Consumption of coal by the railways has declined as the result of the dieselization of the principal lines, but on the other hand the National Steel Works takes substantial amounts for treatment in its coke ovens. The National Steel Works owns mines in the state of Santa Catarina and has installed a modern washing plant, where it gets a 23 per cent yield of metallurgical grade coal. In its coke ovens at Volta Redonda the National Steel Works has been charging 35 per cent national coal and 65 per cent imported coal. Although a larger proportion of national coal could be used with satisfactory results, the entire coal output of the state of Santa Catarina (the only place where metallurgical grade coal is produced) is inadequate to meet the needs. The government recently set up a Plano Nacional do Carvão (National Coal Plan), which has estimated Brazil's coal reserves at 500 million tons, of which 400 million are in the state of Santa Catarina, 30 million in Paraná, and 70 million in Rio Grande do Sul. This estimate is believed to be conservative, but most of the coal has very high ash content. Officials of the National Coal Plan believe that it is practicable to raise production to 2,610,000 tons (of which 450,000 tons would be of metallurgical grade) and that the cost of coal can be cut in half by improvement of port and shipping facilities.

Although hydroelectric power accounts for a relatively small part of the total energy output in Brazil, it has played a decisive role in the industrialization of the Rio-São Paulo area. This may be illustrated from the history of the cotton textile industry. In the early period most of the cotton mills were powered by water wheels, but steam gradually became more important. By 1907, out of a total of 109,284 HP employed in industry, 73 per cent was from steam power, 22 per cent hydraulic, and 5 per cent electric. For the most part, wood was burned under the boilers. The first electric power plant (steam) was established in 1883 at Campos. Two hydroelectric plants were inaugurated in 1889. By 1900 there were 6 steam plants (6,585 kw.) and 5 hydroelectric plants (5,500 kw.).

The first large hydroelectric installation was carried out in Parnaíba,

on the river Tiete, 34 kilometers from the city of São Paulo. This plant was inaugurated in 1901, and its potential increased rapidly to 27,379 kw. The first large hydroelectric plant was constructed in 1901, in the state of São Paulo, and the next large installation was made near Rio de Janeiro, in 1906, both by Canadian interests, which in 1912 consolidated their holdings in the Brazilian Traction, Light and Power Company, Ltd. In the latter 1920's important extensions were undertaken. About the same time American interests bought and improved a number of electric properties in various parts of Brazil. (See Table II. 11.) Of the total production of electricity, 40 per cent is used in industry (45 per cent in the state of Rio de Janeiro and 50 per cent in São Paulo). In most sections electric power supply is inadequate to meet the demands of increasing consumption, despite a 50-per-cent increase in installed capacity since 1940. Both the Brazilian Traction, Light and Power Company and the American and Foreign Power Company (which together supply 83 per cent of the electricity produced) are expanding their investment, and in addition the federal government and several state governments are pushing power projects. (See Table II. 12.)

The completion of the great power project at the Paulo Afonso falls on the São Francisco River may be expected to give a great stimulus to the industrial development of the depressed northeastern states. The Companhia Hidro-Eletrica de São Francisco (CHESF) was organized in 1948. Most of the capital has been supplied by the federal and state governments or by government-controlled enterprises and pension funds, but some stock has been sold to private individuals and firms. A loan of \$15 million was obtained from the International Bank. Steady progress has been made in opening access roads and in the construction of the dams. Two generating units of 60,000 kilowatts each are being installed initially, with provision for a third unit. Two high-tension trunk transmission lines will carry power to the coastal cities. The area to be served by CHESF has a population of about 7 million.

In 1950 Brazil's imports of petroleum products, including lubricants, were valued at about \$130 million, or 13 per cent of the total value of imports in that year. Brazil is generally believed to have large areas favorable to petroleum production, but development has proceeded slowly. Some producing wells have been brought in on the Bay of Todos os Santos, in the state of Bahia. All exploratory and development activities are in the hands of the National Petroleum Council. With the completion of the refineries now under construction or under contract, some additional fillip may be given to drilling. A solution of the petroleum problem that would enable Brazil to supply its rapidly growing requirements for liquid fuel would probably do as much as any one thing to stimulate general economic development.

Natural gas from the Aratú field near Salvador is now finding industrial use.

In 1945 Dr. Glycon de Paiva, an outstanding geologist, published a study of industrial planning in Brazil in which he emphasized the importance of the fuel problem in determining the character and location of industrial development in Brazil. His principal conclusions may be summarized as follows:

1. The principal centers for heavy industry should be along the coast, where imported coal and petroleum will be available at minimum cost. Brazilians should free themselves from prejudice against large-scale imports of fuel and should encourage exports of agricultural and pastoral raw materials in sufficient volume to pay for imports of fuel and raw materials not available in Brazil.

2. Hydraulic energy must provide the chief basis for Brazilian industrialization, which should be patterned after Sweden, Norway, and Canada, rather than the United States and Great Britain. Hence the basins of the Paraíba, Doce, Paraná, and Uruguay rivers will become the chief industrial centers after the coastal belt.

3. Secondary industrial centers may be developed in southwest Matto Grosso (based on local iron, manganese, and limestone deposits and utilizing local charcoal and Bolivian petroleum), at Paulo Afonso (hydro-electric power), and in the lower and middle Amazon Valley (processing local mineral and vegetable raw materials, using charcoal briquettes and imported Peruvian petroleum as fuel).

4. Heavy freight should be moved by ocean and river steamers. Large expenditures on railway transport, other than a highly developed electrified system in the Southeast, are not necessary.

5. The problems of improved agriculture and health can be solved only by the creation of well integrated industrial-agricultural nuclei. There is no adequate economic basis for such improvement among the scattered population of the hinterland. Brazil's resources do not provide the basis for a high standard of living of a large population; hence immigration should be selective.

Enterprise and Technical Skills

The original Portuguese, French, and Dutch settlers were not lacking in boldness and initiative, but by the nineteenth century a large part of the trading activities had fallen into the hands of the English or of the Portuguese, while the well-to-do Brazilians had become a land-owning and slave-owning aristocracy. The land-owning class dominated the political scene during the period of the Empire. Some members of this class were closely identified with important developments of the second half of the century, such as the construction of railways and ports, the organization of immigration and colonization, and the rationalization of the sugar and coffee industries. A study of this record raises doubts as to the conclusion of some historians that the abolition of the monarchy marked a turning point in economic evolution and opened the way for

industrialization and progress. Undoubtedly the leaders of the republican movement believed this, and, as has been seen, the establishment of the republic touched off an orgy of speculation and inflation. But the really important event was not the change in the form of government but the new talents, energies, and ideas that came in with the rising flood of European immigration.

The rolls of industrial leaders in Brazil include a fair sprinkling of old Brazilian family names but more numerous and conspicuous are those of immigrants and nonimmigrant foreigners. Emilio Willems, a well-known sociologist, examined the 1935 statistical yearbook for São Paulo and found that out of 714 industrial enterprises of various sizes, 521 were owned by immigrants or descendants of immigrants.¹⁸ Such names as Matarazzo, Crespi, Martinelli, Carbone, and Siciliano—all Italian-born—are written large in the economic history of São Paulo. In southern Brazil the principal industrial developments, as well as numerous small establishments, are the creation of German immigrant families, such as Renner, Mentz, etc. Syrians have been active in textiles and steel (the Jafets, for example), and East European Jews (such as the Klabins and Lafers) in pulp, paper, rayon, and chemicals.

The abolition of slavery and the establishment of the republic gave rise to exaggerated hopes as to the effect of those actions on the attitudes and aptitudes of the people. In practice these events did not appreciably change the prevailing social climate or scale of values, and little was done to provide educational or economic opportunities for the Negroes, mulattoes, and *caboclos*. Such improvement as has occurred in recent years has been largely the contribution of the new industries.

A large part of industry, like the larger part of agriculture and transport, is at a low level of efficiency, although there are some establishments with a fairly high per-man productivity. In the more efficient plants foremen and skilled workers are usually first- or second-generation immigrants. The arrival of European refugees during the last decade has resulted in the improvement of techniques in the tanning industry, for example.

The increased prestige of industry in recent decades is tending to attract resourceful newcomers, many of whom have had training with foreign enterprises at home or abroad. So far very few Brazilians have revealed any special talents or originality in mechanics or science. Brazilian workers show up fairly well when properly trained, but the level of general education is low, and in the past the opportunities and incentives have been limited.

Foreign-owned companies have made and are making an important contribution to the training of Brazilians not only in mechanical skills, but also as accountants, salesmen, plant managers, and researchers. In 1950 the American Chamber of Commerce for Brazil made a survey of

¹⁸ Smith and Marchant, eds., *Portrait of Half a Continent*, p. 217.

employee training by member companies, most of which were United States-controlled and the others "importantly associated" through United States technical or financial participation. Data provided by 58 companies having 54,126 employees indicated that 6,750 persons had been given local training courses during the years 1946-49 and that 63 employees had been sent to the United States for special training in 1949.

Since 1938 the United States government has offered technical assistance and has provided opportunities for technical and apprentice-training under various programs.

Within recent years Brazilian industrialists have come to realize the importance of industrial training on a fairly broad scale as the *sine qua non* of any important program of industrial development. In 1942 the National Apprentice Service (SENAI) was established. Supported by a tax on payrolls, suitable buildings have been erected in the principal centers, and the work launched on an impressive scale. The Institute of Technological Research at São Paulo has pioneered in testing work and in practical engineering instruction.

Although much needs to be done to develop a pool of trained workers, growing industry should not suffer from lack of new hands. The natural increase of population is at the rate of about 1.2 million a year, and immigration has revived on a fairly important scale. (See Table I. 2.)

Internal migrations on a large scale have thrown into dramatic relief the shift of population and economic gravity from the older settled states to the industrial centers of the southeast and the new lands of São Paulo and Paraná. During the period 1940-50, 410,000 Brazilians from other areas entered the Federal District and 700,000 Brazilians from other states passed through the immigration hostel (Hospedaria de Imigrantes) at São Paulo.¹⁹ The movement has been gaining in intensity during the last decade. In 1951, 208,515 Brazilians from other states entered São Paulo and during the first two months of 1952, 60,300. Many of these move on to Paraná, but the city of São Paulo receives annually about 20,000 from the interior of the state. Most of the migrants come from Minas Gerais and Bahia, but the northeastern states lost 265,100 during the period 1940-50. Most of the migrants now move by truck. During a visit to Brazil in July, 1952, the writer made a motor trip from Volta Redona (state of Rio de Janeiro) to São Paulo, during the course of which he passed a number of these trucks (known in Brazil as *paus-de-arara*, or parrot's perch) packed with migrants and their sparse belongings.

Capital

For approximately a century Brazil has been accustomed to a large inflow of foreign capital—that is, large in relation to the volume of foreign

¹⁹ *Conjuntura Economica*, April, 1952.

trade and the size of the federal budget.²⁰ Prior to 1931 the larger part was in the form of bonds issued in foreign currencies—pounds sterling before 1905, with some French franc bonds between 1905 and 1915, and the larger part in dollars after 1920. During the eight years 1923-30 new federal, state, and municipal loans totalling 107 million pounds sterling were issued, only slightly more than the total of 104 million pounds in the period 1907-14. A large part of the proceeds of these loans was used to meet budgetary deficits or provide service on earlier loans, but directly or indirectly the golden flow helped to provide Brazil with railways, port facilities, and municipal utilities. As the result of readjustment and repayment, the outstanding external bonded debt has been reduced to about \$550 million. Annual service on the foreign debt is \$50 million.

In some respects loans by the International Bank and the Export-Import Bank of Washington have replaced the former public bond issues, although the loans of the two banks are closely related to specific development projects. The International Bank has granted \$130 million in loans for power development and \$12.5 million for railway rehabilitation. The Export-Import Bank has granted credits of \$417 million from 1934 to June 30, 1952, of which \$49,418,000 was for power, \$8,142,500 for two cement plants, \$70 million for the National Steel Works, and additional amounts for railway, shipping, and aviation financing.

"Direct" foreign investments in business enterprises in Brazil have also been large. During the nineteenth century such investments were predominantly British, or managed by London firms, although French, German, Dutch, Portuguese, and other nationalities were represented. During this period, and indeed until recently, the bulk of this investment was in transportation and utilities, with lesser amounts in trading, lands, mining, and industrial activities.

These direct investments represent a substantial amount of money, but their significance consists less in the amount of capital brought into the country than in the initiative, techniques, management, and general industrial "know-how" that emigrated along with the bank drafts. This conclusion is substantiated by the increasing trend in new industries for Brazilians to put up most of the capital, while the foreign contribution is primarily in the form of patents, special skills, and experienced management.

The total registered foreign capital in Brazil as of December 31, 1951, (not including bonds held abroad or loans) was \$1,520 million, of which \$686 million was American, \$480 million Canadian, \$190 million British, and \$50 million French. Smaller amounts were held by various other European and South American countries.²¹ It is not possible to determine what part of this was originally brought in as foreign currency and what

²⁰ In 1931 external debt service absorbed 34 per cent of the budget of the federal government.

²¹ Banco do Brasil, S. A., *Relatório de 1951*.

proportion represents reinvested profits, but it appears probable that the latter was at least 50 per cent.

In 1940 foreigners supplied 39.7 per cent of the nominal capital of industrial enterprises, according to census data. With the omission of public utilities from the totals, the foreign share is reduced to 27 per cent. Other than in utilities, the largest foreign capital was in food, textiles, manufactures of nonmetallic minerals, beverages, chemicals, and pharmaceuticals. Relative to total capital, the highest percentages were as follows: mechanical shops 58.0, nonmetallic minerals 49.3, clothing and toilet articles 43.9, beverages 42.3, wood 28.1, and metallurgy 26.5.²² Nominal capital in 1940 is given as Cr. 7,273 million, or Cr. 5,552 million (\$330 million) less utilities. Foreign capital, less utilities, amounted to Cr. 1,521 million (\$82 million). However, the census showed the total capital invested in industry in 1940 was Cr. 17,809 million (\$962 million), but distribution by ownership is not given.

The total amount of foreign capital invested in Brazil has probably declined from the peak around 1930, as the result of the readjustment of the bonded debt and the nationalization of the former foreign-owned railways, the Amazon Valley Shipping Company, and some port and utility enterprises. Various former German enterprises were liquidated or nationalized. Ford sold his Amazon Valley properties to the Brazilian government for a nominal sum. Brazilians bought out the British-organized North Paraná Land Company and obtained majority ownership of the Belgo-Mineira iron and steel enterprise. At the same time United States and Canadian investments, chiefly in utilities and manufacturing activities, have increased, largely through reinvested profits. In recent years remittances of profits and dividends have tended to exceed receipts of new capital.

A large part of the Brazilian industrial structure has been built up by immigrants in a manner made familiar by the example of various outstanding industries in the United States. The classic Brazilian example is furnished by the career of the late Francisco Matarazzo, who, at the time of his death in 1937, was considered the leading manufacturer in South America. He arrived in Brazil in 1881, and with the assistance of friends from his home town in Italy started a small rural store in the interior of the state of São Paulo. He began to buy hogs for lard distributors, and then started a lard refinery of his own. He packed his lard in tins, instead of the usual barrels, and made a great success. Thereafter he moved to the city of São Paulo and began dealing in flour and grain. With the assistance of British engineers, and aided by credit from an English bank, he erected flour mills. This led him into textile manufacturing in order to provide his own bags. He next branched out into the cottonseed oil business; this led to the manufacture of soap and toilet preparations; then of packing cases; then he established his own

²² *O Observador*, ano. XIII, No. 147, April, 1948, p. 35.

saw mills, box factories, and plants for making tin containers and cooking utensils. The business is now directed by the founder's son and successor. The 1950 report and balance sheet for S. A. Industrias Reunidas F. Matarazzo showed a list of activities which if presented here would take up a page and a half of typescript and covers a variety of textile, food, clay and glass, chemical, and other plants.

A considerable number of manufacturers have also been recruited from the ranks of the *mascates*, or itinerant traders, who serve the frontier regions of Brazil in a manner somewhat like the tinker in early American life. At one time Italians, and particularly Calabrians, were the *mascates*, but in more recent times this business has been almost monopolized by Syrians, and particularly the Maronites, who began to emigrate to Brazil in the 1890's because of persecution by the Turkish government. The successful *mascate* settles down at a crossroads store. "Sometimes the store becomes a business block, the owner bringing over some of his countrymen as beginners in the business, who go with their trucks after more business in the vicinity. The merchant thus becomes rich and is looked upon in the community as an intermediary, banker, and, most of the time, usurer."²³ The prosperous *mascate* may next move to a large town to open a new store or to start some manufacturing enterprise. In São Paulo many of the newer industries, particularly in the textile lines, have been the result of the initiative of Syrians. The "25 de Marco Street" is occupied almost exclusively by Syrians, and there are entire blocks of the new-rich in the Avenida Paulista in São Paulo.

The history of the Matarazzo firm illustrates the chief factors involved in Brazilian industrial expansion. In the past a substantial number of the industrial enterprises have been family affairs. With the exception of foreign-controlled branch plants, they were labor-intensive and capital-extensive. In recent years, as labor costs have gone up and as the industrial structure has broadened, many new limited companies or corporations have been created, and there is a tendency toward greater capital investment per worker. In the Matarazzo industrial empire one finds plants like the Lydia cotton mill with the last word in equipment, but at the same time other plants producing light consumer goods (such as toilet articles) which use a minimum of automatic machinery.

There are an increasing number of medium-sized and larger plants. The IAPI records showed an average of 30 employees per establishment in 1948 as compared to 25 per establishment in 1937. But about 75 per cent of all Brazilian industrial establishments employ 10 operatives or less as compared to 48 per cent in that category in the United States.

The profits of established enterprises are the chief source of funds both for expansion and for creating new industries. Bank loans are at times important both in establishing new enterprises and in providing

²³ Pierre Deffontaines, "Mascates, or the Small Itinerant Traders of Brazil," *Brazil* (New York, Feb., 1937).

working capital. The elder Matarrazzo borrowed 666 contos from a British bank to start his flour-milling activities. Some recent large establishments such as the Klabin paper and pulp plants have had financing from the Bank of Brazil. The stock market plays a negligible role as a financial medium. During the years 1946-49 the ratio of gross capital formation to gross national product ranged between 15 and 20 per cent. The United Nations Economic Commission for Latin America (ECLA) placed investment by the federal government during these years at 7 to 20 per cent of the total.²⁴ For 1950 ECLA estimated total investments at Cr. 25,176 million, of which Cr. 3,453 million was made by the federal government. No allowance is made for investment by state and municipal authorities. The private investment is placed at Cr. 21,723 million, of which building accounted for Cr. 7,920 million. ECLA estimated the amount of gross investment of fixed capital in industry during 1950 at Cr. 9,614 million (\$500 million), although this is admittedly a rough approximation.

Until recently the government's operations in the economic field consisted chiefly of the Bank of Brazil, the principal railways, telegraph services, and international, coastal, and river shipping services. During the last decade or so there has been a marked tendency toward expansion. In the industrial field the outstanding instance is the National Steel Company, but the government has also launched an alkali concern, is constructing the Paulo Afonso power plant, has a small petroleum refinery, and controls the small petroleum producing operation in Bahia.

A National Bank for Economic Development was established in June, 1952, to undertake "financial operations related to the reequipment and development of the national economy." In addition to the resources in national currency derived from taxation and deposits of government-controlled entities, the Bank will administer the foreign credits obtained for development purposes. It is expected that chief emphasis will be given to rehabilitation of the railways and ports, expansion of hydroelectric power, and improvement of food production, storage, and distribution.

National Policy

Brazilian government policy has long been to favor new industries both by protection against foreign competition and by direct aid through loans, tax exemptions, compulsory purchasing arrangements, and a variety of other measures.

Protection to selected items has been a feature of Brazilian tariffs since the first autonomous tariff of 1844. The degree of protection and the extent of coverage gradually increased, despite some ups and downs and despite bitter criticism of the tariff as the cause of the high cost of living during the early years of the present century. Since about 1905 tariff protection has also been extended to food products.

²⁴ *Recent Developments and Trends in the Brazilian Economy*, pp. 35, 36, 125.

Throughout the period of the monarchy and during the early years of the Republic, import duties were the chief source of revenue of the federal government (nearly 70 per cent in 1889, 55 per cent in 1910, 36 per cent in 1936), but as the consumption and income taxes became the main dependence of the fisc, the government had a freer hand in using the tariff as a protection device.

Local industries are also favored through the operations of the excise tax, to which most consumer goods, including passenger cars, are subject. The importance of this tax is shown by the fact that in 1950 it accounted for 41 per cent of the total federal revenues. It applies both to local production and to imported goods, but in the case of many items imports pay at a higher rate. Furthermore, in some cases (e.g., powdered milk) local products are exempt although imports are taxed.

Import duty rates on the common grades of cotton textiles have been virtually prohibitive for many years. Stiff protection is now given most of the higher grade materials and specialties. For example, Brazilian manufactures of tropical-type suiting materials are protected by duties equivalent to from 65 to 95 per cent ad valorem (according to weight) on Palm Beach cloth. Duties on printed cotton cloth range from 16 to 68 per cent, depending on thread count and weight. Other examples of highly protective duties are, in terms of ad valorem equivalents, 73 per cent on macaronis and spaghettis, 91 per cent on calcined infusorial earth, and 98 per cent on solvent mixtures and paint removers. On the other hand, duties on machinery and articles used in manufacture are relatively moderate. The ad valorem equivalent on electric motors and dynamos, weighing over 100 kilograms, is 3 per cent and on light motors and dynamos (the type made in Brazil) 28 per cent.

Even more effective than protective duties are direct import controls. In October, 1951, no import licenses were being granted for such items as canned fruit, cotton and rayon cloth, shoes, lard, cigarettes, fountain pens, and hand tools.

Since the war Brazil has maintained the exchange rate at 18.50 cruzeiros to \$1.00 although the curb rate for nontrade transactions has frequently been above 30. In most cases domestic prices have been adjusted to the curb rate. One consequence of this is that imports of machinery and of raw materials and fuels have been artificially stimulated but without discrimination as to the type of industry. At the same time imports of manufactured articles that might compete with local production have been restricted by import duties, import prohibitions, and exchange rationing.

Industry has been assisted, not only indirectly through tariff protection, but also directly by subsidies, guarantees of fixed return on the capital invested, and other special favors. Most of the leading industries of the country have at one time enjoyed, and many of them still enjoy, privileges of this character. During the nineteenth century foreign and domestic

capital was induced to invest in specific enterprises through governmental guarantees of interest on the capital invested, and most of the railways were built on this basis. The modernization of the sugar industry through the erection of sugar centrals was also brought about by a guarantee of 7 per cent interest, by a law enacted in 1875. Similar guarantees were later offered in connection with the rubber and the iron and steel industries.

Industries have also been favored by direct government loans or by loans from the Bank of Brazil or other government-controlled agencies. A decree of March 30, 1918, authorized loans to coal-mining companies up to one-half of the capital invested in installations and mineral lands. A number of companies took advantage of this offer, and the domestic output of coal slowly increased, but it was only after 1931, when railways and utilities were required to buy Brazilian coal, that any important expansion of output occurred. (See Fuel and Power Section.) In 1924 further facilities were granted to producers of coal by-products. The state governments have also granted loans or outright subsidies and also tax exemptions to various manufacturing establishments.

A decree of 1932 providing for the development of the cement industry may be cited here as illustrating government aid to new industries. The law granted exemption for ten years from import duties on machinery required in the construction and extension of plants, and also exemption from certain other taxes for a period of fifteen years, provided the contracting individual or company agreed to the following conditions: (1) each plant to have a minimum capacity of 150,000 barrels per year; (2) only native raw materials to be used; (3) the enterprise to be subject to federal "fiscalization"; and (4) the company to employ not less than 80 per cent native Brazilians and to assist in training technicians and operators by giving employment to apprentices and young engineers.

During the depression of the 1930's the government undertook to regulate the further expansion of certain industries. As an emergency measure, the government in 1931 made subject to special license all imports of machinery for use in industries which the Ministry of Labor, Industry, and Commerce should designate as in a condition of overproduction. These restrictions, which were subsequently extended to March 31, 1937, were applied to types of machinery used in the spinning and weaving of cotton, the weaving of jute, wool, and silk; and in making shoes, hats, sugar, matches, and paper. In practice, the importation of considerable quantities of machinery for bleaching, printing and finishing cloth, and for spinning higher count yarns, was permitted. One effect of the restrictions was to stimulate the manufacture of weaving machinery in Brazil. This measure, combined with increased protection through higher import duties and exchange restrictions, increased the profitability of the established mills and enabled them to modernize their equipment and expand into new processes. In the first republican constitution the levying of export duties was

reserved to the states. Since 1934 this right has been somewhat restricted, but export duties remain a major source of revenue for some states. At times this tax has been fixed at levels to discourage the export of raw materials in order to preserve the same for existing industries or in the hope of encouraging the establishment of industries using such materials. At one time the state of Minas Gerais levied a high tax on shipments of iron ore not only to foreign destinations but also to the state of São Paulo. Theoretically, duties on interstate movements of goods have been prohibited but in practice sales and stamp taxes and various types of administrative measures hamper the flow of goods across state boundaries.

It is impracticable within the limits of this paper to attempt to assess the effects of government policy on industrialization other than in broad terms. In the case of considerable variety of consumer goods it appears unlikely that, without fairly stiff protection, industries of any importance could have been launched successfully (or, if started under cover of war-time scarcities, could have survived) in the face of more economical production and perhaps a certain amount of genuine "dumping" by the advanced industrial nations (including Japan). On the other hand, it is clear that the most generous official favors have not been able to create new industries unless other circumstances were also favorable. It can also be argued that the degree of protection has at times relieved the manufacturers of any need or incentive to reduce costs through improved processes, but admittedly this is a complex problem which involves taxes, transport costs, social or political restraints, and other factors.

Various forms of direct aid have succeeded in putting certain industries on their feet and of propping them up, but it may be questioned whether this type of action has not done more harm than good. It has resulted in higher costs throughout the industrial structure and has tended to put a premium on political favoritism rather than on business initiative and judgment. It is of interest to note that the recent trend has been away from concessionary private enterprise toward more direct government operation through "mixed companies" in which private capital is encouraged to participate.

By decree-law of July 6, 1951, President Vargas created a Commission for Industrial Development, under the chairmanship of the Minister of Finance, to study and propose measures of an economic, financial, and administrative nature essential for the establishment of new industries or the expansion of existing ones. It will make recommendations regarding import tariffs, taxation, immigration, and contracting of foreign technicians, credit, and similar matters. Apparently this Commission will have the positive function of encouraging investment in essential industries and the negative function of discouraging the importation of outmoded factory equipment.

In announcing the establishment of this Commission, President Vargas stated his hope that it would prepare the way "for the development of large

and basic industries so necessary to the economic independence of the country." Clearly the phrase "economic independence" is not to be taken literally, since for a long time to come further industrialization is likely to increase, rather than lessen, Brazil's dependence upon imported materials, fuels, machinery, and techniques, but it does emphasize the psychological effect of scarcities during two World Wars and during the present period of rearmament.

CONCLUSION

The acceleration of industrial growth over the last decade or so may be attributed primarily to three factors: First, the changing public attitudes that give increasing weight and prestige to mechanics and to the industrial sector;²⁵ secondly, the cumulative effect of industrial expansion; and thirdly, the broadening of the national market through increase of population and per-capita income of large groups. Perhaps one should add the growth of national sentiment and pride in accomplishment, reinforced by the problem of scarcities and the feeling of insecurity created by war and international tension. Other factors have been particularly important in connection with individual industries. The principal retarding factors have been the low level of education and opportunity, failure to develop an adequate national transportation system, limited coal resources, and relatively unfavorable climate in the older settled areas.

The tempo of industrialization is therefore conditioned by a number of factors, some of which are deeply rooted in the social and institutional structure of the country. As has been pointed out frequently elsewhere by specialists in this field, industrialization requires psychological and social adjustments as well as factory buildings and machines. Skills of a handicraft type, however valuable in themselves, are of little use in machine operations. Up to a point a country may develop large consumer-goods industries by importing machines and training operatives, but industrialization of a more advanced type demands a new rationale and a scientific temper.

Generally speaking, discussions of this problem tend to exaggerate the importance of large amounts of capital and underestimate the significance of individual initiative and a general social climate favorable to saving, investment, and development of skills. The flow of foreign loans and investment in manufacturing industries has been, and can continue to be, of great value, but the foreign contribution must bear a reasonable ratio to local saving and investment and to the state of local technical and managerial skills in order to make its maximum contribution to the national economy.

Every country in the early stages of industrialization is in some respect

²⁵ The interest in aviation and the pride in Brazilian-born Santos Dumont, an aviation pioneer, are examples. Santos Dumont's father was a railway engineer and builder.

unique, while at the same time conforming to the general pattern elsewhere. The chief ingredients are the same in every case, but the proportions in the mixture may vary within certain limits. No country can import industrialism ready-made.

In a country like Brazil new industries have some advantages but many disadvantages as compared to those in more highly industrialized countries. Theoretically a new plant can take advantage of the latest inventions and work with only the latest and most efficient machinery, whereas much of the equipment in the older countries is apt to be obsolescent. On the other hand, a manufacturer in the more advanced nations has numerous advantages: it is comparatively easy to secure skilled or highly specialized personnel; and raw materials, semimanufactures, or chemical ingredients required in the manufacturing process are readily available in standardized and tested form, thus reducing the need for large inventories. Of course, one country or the other may have a decisive advantage as regards a particular raw material in relation to fuel and transport costs.

Economic development in the sense of wide distribution of wealth, high per-capita real income, and opportunities for all is a relatively new concept in Brazil and one that by no means has general acceptance. European immigration, the subdivision of large estates, and the rise of industry and urbanization have gone far to break down the restraints—for better and for worse—of the old society. The experience of Brazil as well as of other countries suggests that the establishment of manufacturing industries acts as a strong leaven in the economy as a whole, and that in some historical and institutional situations it is the only practical means of initiating changes in traditional practices. The danger lies in the failure to recognize that sustained economic growth can come only from permanent improvement of the productive factors.

STATISTICAL APPENDIX

TABLE II.1

BRAZIL: ACTIVE POPULATION IN AGRICULTURE AND INDUSTRY

YEAR	ACTIVELY ENGAGED IN AGRICULTURE	PERSONS ENGAGED IN INDUSTRY
1920.....	6,378,000	313,156
1940.....	7,551,000	960,663
1950.....	8,250,000	1,492,884

SOURCES: Agriculture—1920 and 1940 from United Nations Economic Commission for Latin America, *Economic Survey of Latin America 1948*, p. 200; for 1950, Luiz L. de Vasconcelos, *Revista Brasileira de Economia* IV, 4 (Dec. 1950), 94; industry—industrial censuses. For the total population of Brazil, see Table I in essay by T. Lynn Smith, below.

NOTE: The U. S. Bureau of the Census, in a monograph, *Brazil: Summary of Biostatistics* (Jan. 1945) makes the following comments: "The Census of 1890 was taken under extraordinarily difficult circumstances; slavery had been abolished only two years before, and the federated Republic had replaced the Empire the previous year. The results of the Census of 1900 were regarded as quite inaccurate at the time. The comprehensive census of 1920 covered population, industry and agriculture. However, there was considerable evidence that it represented a great over-enumeration of the population and especially for that of certain areas."

The earlier censuses are not of much help in attempting to determine the occupational distribution of the population. The Brazilian censuses classify by industry rather than by occupation, that is, a doctor employed by a railway company is classified under transportation. There is also considerable confusion about active and inactive population, housewives or nonremunerated domestic activities, and other matters. It may also be doubted whether all of the persons listed under the agricultural classification are actually engaged in farming.

TABLE II.2
IMMIGRATION INTO BRAZIL, TEN-YEAR AVERAGES, 1884-93—1934-43
AND ANNUAL, 1944-50

PERIOD	AVERAGE PER YEAR	PERIOD	ANNUAL
1884-1893	88,367	1944	1,593
1894-1903	86,211	1945	3,168
1904-1913	100,662	1946	13,039
1914-1923	50,398	1947	18,753
1924-1933	73,722	1948	21,568
1934-1943	19,724	1949	23,844
		1950	34,460

Source: I.B.G.E., *Anuário Estatístico do Brasil*, ano XII, 1951, p. 55.

TABLE II.3
BRAZIL: NATIONAL INCOME BY DISTRIBUTIVE SHARES, 1947-49
(IN MILLIONS OF CRUZEIROS*)

SOURCE OF INCOME	1947	1948	1949
I. COMPENSATION OF LABOR, EXCEPT			
AGRICULTURE	63,460	72,769	87,437
1. Wages and salaries	41,302	46,251	55,007
(a) Private	31,097	34,602	41,291
(b) Government	10,205	11,649	13,715
2. Supplement to wages and salaries	1,215	1,358	1,723
3. Income of own account workers	12,251	14,207	16,733
4. Income from professions	3,710	3,863	3,978
5. Other labor income	4,982	7,090	9,995
II. PROFITS, EXCEPT AGRICULTURE	15,557	15,534	18,010
6. Corporate profits before taxation	6,373	6,494	8,907
(a) Corporate profits tax	928	937	1,253
(b) Dividends		2,813	3,210
(c) Other income payments			1,130
(d) Undistributed profits			3,314
7. Other profits	9,184	9,040	9,103
III. INTEREST	1,262	1,519	1,775
IV. RENT	4,284	5,501	7,148
V. AGRICULTURE	42,331	50,773	57,238
VI. NET INCOME PAID ABROAD†	-662	-1,166	-1,160
VII. NATIONAL INCOME AT FACTOR COST‡	126,233	144,930	170,447

*At current values; no corrections for changes in purchasing power of cruzeiro.

†The surplus of net income accruing abroad over net income actually paid abroad amounts to Cr. 1,319 million in 1949.

‡Components do not always add to totals due to rounding.

Source: *Revista Brasileira de Economia*, Ano. 5, No. 3 (Sept. 1951).

TABLE II.4
BRAZIL: NATIONAL INCOME, 1949:
REMUNERATION OF LABOR (EXCEPTING AGRICULTURE AND ANIMAL HUSBANDRY),
PRIVATE SECTOR BY INDUSTRIAL DIVISIONS

INDUSTRIAL DIVISION	INCOME (in millions of cruzeiros)
Private sector, total	73,721
Commerce	10,500
Industry	23,962
Financial intermediaries	1,881
Transportation and communication	9,788
Liberal professions	3,978
Services	8,232
Earnings of domestic service	3,662
Employers and similar	9,995
Supplement to wages and salaries:	
Employer contribution to Social Security	1,723

SOURCE: *Revista Brasileira de Economia*, Ano 5, No. 3 (Sept., 1951), p. 22

TABLE II.5
BRAZIL: DISTRIBUTION OF TOTAL INCOME BY SECTORS OF PRODUCTION, 1947

SECTOR (INDUSTRIAL ORIGIN)	PER CENT OF TOTAL
Agriculture	40
Industry, including mining and construction	23
Commerce	14
Government	10
Transportation and communication	6
Services	7
	100

SOURCE: J. B. D. Derksen, in *Revista Brasileira de Economia*, June, 1950, p. 44.

TABLE II.6
BRAZIL: VALUE OF PRODUCTION OF MOVABLE GOODS BY ECONOMIC SECTORS, 1950
(IN MILLIONS OF CRUZEIROS)

SECTOR	VALUE (in millions of cruzeiros)
Agriculture (crops)	51,177
Vegetable extractive industries	1,629
Primary production of animal origin	14,198
Mineral production	5,010
Manufacturing	50,000
Total	122,014

SOURCE: Based on the 1950 industrial census and estimates published by the Bank of Brasil (*Relatorio de 1951*, p. 42).

TABLE II.7

BRAZIL: AGRICULTURAL AND INDUSTRIAL PRODUCTION VALUES AT 1939 PRICES,
IN MILLIONS OF CRUZEIROS, ANNUAL AVERAGES

Period	AGRICULTURAL PRODUCTION			INDUSTRIAL PRODUCTION			Total Product
	For Domestic Consumption	Exports	Total	For Domestic Consumption	Exports	Total	
1920-24	3,614	1,629	5,243	3,785	negligible	3,785	9,028
1925-29	4,137	1,615	5,751	4,027	"	4,027	9,778
1930-34	5,124	1,807	6,931	4,738	"	4,738	11,669
1935-39	5,634	2,510	8,144	6,424	12	6,436	14,580
1940-44	6,322	1,904	8,226	9,119	82	9,201	17,427
1945-49	6,295	2,668	8,963	11,915	65	11,980	20,943
1949	7,212	2,702	9,914	13,247	37	13,284	23,198

SOURCE: United Nations Economic Commission for Latin America, *Economic Survey of Latin America 1949*, chap. vii.

NOTES: The Instituto Brasileiro de Geografia e Estatística has published data relating to the 1939 value of the production of 21 articles representing 90 per cent of total agricultural production. The Research Centre of the Economic Commission for Latin America has produced a quantum index of total production, including, of course, the 21 above-mentioned articles. The total agricultural production has been calculated by applying this index to the above-mentioned value plus the value of meat.

The value of exports of agricultural products has been calculated at prices received by the producers.

The Research Centre of the Economic Commission for Latin America has also produced a quantum index of industrial production. The figures for industrial production have been calculated by applying this index to the net value of industrial production as given in the Synopsis of the Industrial and Services Censuses of Brazil published by the Instituto Brasileiro de Geografia e Estatística.

Exports of manufactured goods have also been computed at the cost of the factors of production and only since 1937 in view of their small volume before that year.

TABLE II.8

BRAZIL: GROWTH OF MANUFACTURING INDUSTRIES

CATEGORY	1907	1920	1940	1950
Number of establishments	3,250	13,336	49,418	89,086
Number of operatives	151,841	275,512	781,185	1,256,807
Capital invested (million cruzeiros)	666	1,815	17,809	51,675
Energy utilized (c.v.)	109,284	310,364	1,186,358	2,667,017
Value of production (million cruzeiros)	742	3,200	17,479	116,747
Value added by manufacture (million cruzeiros)	n.a.	1,303	7,743	46,320

NOTES: The data for 1920, 1940, and 1950 are taken from the industrial censuses of those years (figures for gross and net value of production relate to the year preceding the census). The data for 1907, based on an industrial survey, are not strictly comparable with later years, since they do not include some types of small plants that are included in the censuses.

The specific sources are: 1907 - *Centro Industrial do Brasil, O Brasil*, III, Rio de Janeiro, 1909, 265; 1920 and 1940 - Instituto Brasileiro de Geografia e Estatística, *Recenseamento Geral do Brasil* (1 de Setembro de 1940), Série Nacional, III, Censos Econômicos, Rio de Janeiro, 1950, 184-185; 1950 - I.B.G.E., Conselho Nacional de Estatística, Serviço Nacional de Recenseamento, *Recenseamento Geral do Brasil - 1950, Sinopse Preliminar do Censo Industrial*, Rio de Janeiro, 1952, mimeographed.

TABLE II.9
BRAZIL: PERCENTAGE DISTRIBUTION OF MANUFACTURING PRODUCTION,* BY
INDUSTRIAL GROUPS, 1919, 1939, AND 1949

INDUSTRY	VALUE OF PRODUCTION		VALUE ADDED BY MANUFACTURE		
	1939	1949	1919	1939	1949
Textiles	21.57	22.25	28.2	19.63	19.98
Foodstuffs & beverages	33.47	21.89	28.6	26.89	17.37
Chemicals, including rubber goods & paper	10.68	15.00	9.0	11.48	15.92
Metallurgy & metal-working	10.50	11.32	6.0	11.69	12.45
Construction	5.75	7.57	1.3	8.38	10.89
Apparel, table & bed linen, textile confections	4.36	4.92	8.2	4.31	4.80
Ceramics, including cement	3.48	3.36	3.8	4.72	4.51
Tobacco manufactures	—	2.69	5.3	—	2.14
Lumber and manufactures of wood	4.12	1.94	5.2	4.76	2.21
Electrical apparatus	—	1.90	—	—	1.88
Nonwooden furnishings	—	1.61	1.9	—	1.84
Printing	2.45	1.56	—	3.19	2.00
Tanning & leather manufactures	1.76	1.38	1.8	1.51	1.17
Gins, etc.	1.86	0.30	—	3.44	0.55
Jewelry, etc.	—	0.24	—	—	0.24
Miscellaneous	—	2.07	0.4	—	2.05

*Extractive operations and utilities omitted. The totals, in millions of cruzeiros were: value of production—16,778 in 1939 and 124,208 in 1949; net value added—7,200 and 53,972 respectively.

SOURCES: I.A.P.L. Instituto de Apresntadoria e Pesquisa das Industrias, *O Seguro Social, A Industria Brasileira*, (1) *Instituto dos Industriarios*, 1950, p. 60. The column showing per cent of total value added by manufacture, 1919, from *Recenseamento do Brasil* ... 1920, Vol. V, 1a parte, Rio, 1927, p. cxvii.

TABLE II.10
BRAZIL: QUANTITY OF PRODUCTION, SELECTED ITEMS, 1930, 1940, AND 1950

ITEM	UNIT	1930	1940	1950
Pig iron	Metric tons	35,305	185,570	729,000
Steel ingots	Metric tons	20,985	141,201	789,000
Steel-rolled products	Metric tons	25,895	135,293	623,000
Cement	Metric tons	87,160	744,673	1,386,000
Cotton piece goods	Million linear meters	476	848	1,200*
Woolen cloth, including mixtures	Million linear meters	4.2	6.6	13.6†
Rayon	Metric tons	n.a.	6,500	20,000
Vegetable oils	Metric tons	n.a.	126,688	176,093‡
Automobile tires	Number	1,076	236,189	1,353,293
Inner Tubes	Number	1,610	186,576	880,523
Coal	Metric tons	385,148	1,048,533	2,016,000
Paper	Metric tons	52,315	121,000	245,000
Wood pulp	Metric tons	n.a.	43,000‡	131,000

SOURCES: Census of manufactures.

NOTES: *Production reached a peak of about 1,500 million meters in 1943.

†Production in 1949. ‡Production in 1941. n.a. Not available.

TABLE II.11
BRAZIL: HISTORICAL SUMMARY OF ELECTRICAL INDUSTRY, FROM
JUNE, 1883, TO DECEMBER 31, 1947

	1883	1889	1900	1910	1920	1930	1940	1947
Localities served	1	3	17	119	431	1,536	2,205	2,923
Supplying companies	1	3	11	88	306	791	1,312	1,602
Steam-electric plants	1	2	6	28	134	337	740	876
Hydroelectric plants	—	1	5	60	204	541	732	918
Mixed electric plants	—	—	—	—	5	13	27	16
Total plants	1	3	11	88	343	891	1,499	1,810
Installed capacity in kw.								
Steam electric	523,143	6,585	21,996	77,825	128,625	182,318	252,538	
Hydroelectric	—	1,475	5,500	137,864	279,378	618,476	924,199	1,244,321
Total	523,143	12,060	27,496	315,689	407,943	747,101	1,106,517	1,496,859

SOURCE: Data supplied by Brazilian Government. Also compare I.B.G.E., *Anuário Estatístico do Brasil, 1951*, pp. 159-161.

TABLE II.12
BRAZIL: POWER-GENERATING FACILITIES, 1950, AND EXPANSION PROGRAMS

REGION	STATE	INSTALLED CAPACITY IN 1950 (KW.)	PER CENT OF TOTAL INSTALLED CAPACITY	MAJOR ADDITIONS UNDER WAY (KW.)	FURTHER ADDITIONS TENTATIVELY PROGRAMMED (KW.)	TOTAL POWER AT COMPLETION (KW.)
SOUTH	São Paulo	847,415	45.0	420,000	237,600	1,505,015
	Paraná	39,466	2.1	—	82,600	122,066
	Santa Catarina	39,043	2.1	—	26,000	65,043
	Rio Grande do Sul	96,503	5.1	22,000	183,800	302,303
	Total (South)	1,022,427	54.1	442,000	530,000	1,994,427
EAST	Federal District & Rio de Janeiro State	423,503	24.6	340,000	58,000	861,503
	Espirito Santo	10,323	0.6	—	12,500	22,823
	Minas Gerais	211,223	11.2	—	90,500	301,723
	Bahia	33,012	1.8	120,000	—	153,012
	Sergipe	7,153	0.4	—	—	7,153
	Total (East)	725,514	38.6	460,000	161,000	1,346,514
CENTER-WEST	.....	10,332	0.5	—	6,000	16,332
NORTHEAST	.....	101,612	6.0	—	3,000	115,271
NORTH	.....	11,956	0.6	—	—	11,956
TOTAL		1,882,500	100.0	902,000	700,000	3,484,500

SOURCES: Same as in Table II.11.

TABLE II.13
BRAZIL: TRAFFIC INDICES

	YEARLY AVERAGES			PERCENTAGE INCREASE FROM 1925-29	
	1925-29	1945-49	1949	1945-49	1949
TRANSPORT INDICES (1937 = 100)					
Coastwise shipping	71.2	143.1	154.3	101.0	116.7
Railway passenger-kilometers	85.1	199.1	203.9	134.0	139.6
Railway freight ton-kilometers	71.1	152.0	156.4	113.8	120.0
CONSUMPTION					
Gasoline (1000 tons)	209.0	894.1	1,370.0	327.8	555.5

SOURCES Instituto Brasileiro de Geografia e Estatística (I.B.G.E.), *Repertório Estatístico do Brasil; Quadros Retrospectivos No. 1* (1941); I.B.G.E., *Anuário Estatístico do Brasil*, various years; data supplied by Brazilian government officials.

TABLE II.14
BRAZIL: POPULATION AND QUANTUM OF EXPORTS AND IMPORTS
Annual Averages: Population in Millions; Exports and Imports—
Quantum Indices; Base, 1937 = 100

PERIOD	POPULATION		EXPORTS	IMPORTS
	In millions	1937 = 100		
1900-04	18.35	48	60*	not available
1905-09	21.21	55	65	"
1910-14	24.58	64	56	"
1915-19	28.38	74	69	49
1920-24	31.62	82	72	74
1925-29	33.64	87	73	122
1930-34	35.80	93	80	63
1935-39	38.62	100	111	89
1940-44	43.05	113	97	75
1945-49	47.55	123	124	132
1949	49.35	128	117	146

*For 1901-04 only.

SOURCE: United Nations Economic Commission for Latin America, *Economic Survey of Latin America 1949*, chap. vii.

The basic data used to calculate the prices and quantum indices were taken from: Serviço de Estatística Econômica e Financeira, of the Brazilian Finance Ministry. The figures referring to population were taken from the Instituto Brasileiro de Geografia e Estatística.

TABLE II.15
 BRAZIL: QUANTUM OF EXPORTS AND IMPORTS, TERMS OF TRADE
 AND CAPACITY TO IMPORT

ITEMS	YEARLY AVERAGES		
	1925-29	1945-49	1949
Population.....	33,643	47,550	49,350
	(In thousands of inhabitants)		
Quantum of exports.....	73	124	117
Export prices.....	101	297	350
Import prices.....	51	240	270
Terms of trade.....	197	123	130
Capacity to import*.....	143	153	152
Quantum of imports.....	122	132	146
	(Indices, 1937 = 100)		

*Quantum of exports multiplied by terms of trade.

Source: United Nations Economic Commission for Latin America, *Economic Survey of Latin America 1949*, p. 212.

TABLE II.16
BRAZIL: QUANTUM AND COMPOSITION OF EXPORTS
(VALUES AT 1937 PRICES, IN MILLIONS OF CRUZEIROS)

COMMODITIES	YEARLY AVERAGES		
	1925-29	1945-49	1949
Agricultural and livestock products...	3,637	5,459	5,420
Coffee.....	2,510	2,889	3,407
Cotton.....	94.3	971.4	615.3
Hides and skins.....	263.5	224.1	270.9
Cocoa.....	148.9	215.9	240.5
Oil-seeds.....	77.6	178.8	189.4
Sugar.....	24.0	109.4	49.0
Pine.....	21.6	109.1	99.7
Carnauba wax.....	67.8	104.3	119.5
Fruit*.....	39.6	90.7	103.3
Tobacco.....	75.6	86.8	73.2
Rice.....	4.1	86.0	0.8
Linters*.....	1.1	56.8	19.9
Maize.....	2.0	31.8	5.5
Raw wool*.....	5.0	29.8	25.9
Other timber.....	8.5	27.2	27.8
Cocoa butter*.....	0.3	26.9	25.3
Oil cakes*.....	6.2	24.3	22.9
Uricuri wax.....	.....	17.6	13.2
Meat extract*.....	0.4	3.5	2.4
Meat.....	81.5	63.4	41.2
Rubber.....	114.7	62.2	18.1
Yerba mate.....	90.0	50.6	49.0
Minerals.....	59.6	96.2	77.5
Iron ore.....	.....	33.5	25.7
Manganese ore*.....	55.1	29.8	26.4
Diamonds.....	.....	17.7	16.4
Mica*.....	0.5	9.5	5.8
Quartz*.....	4.1	5.5	3.1
Manufactures.....	3	320.9	124.8
Chem. and pharm. products.....	.....	5.5	8.2
Cotton textiles.....	3	202.9	53.2
Vegetable oils.....	.....	54.3	28.8
Miscellaneous manufactured goods.....	.....	17.9	15.3
Iron and steel manufactures.....	.....	19.8	13.3
Cast iron.....	.....	11.7	5.4
Rubber manufactures.....	.....	6.6	.6
Synthetic textiles.....	.....	1.8	.....
Woolen textiles.....	.....	.5	.....
Unclassified.....	13.5	440.9	334.1
GRAND TOTAL.....	3,710	6,317.2	5,956

SOURCE: United Nations Economic Commission for Latin America, *Economic Survey of Latin America 1949*, p. 238.
*Average for 1926-29.

TABLE II.17
 BRAZIL: QUANTITY OF SELECTED EXPORTS, ANNUAL AVERAGES,
 BY TEN-YEAR PERIODS
 (IN THOUSANDS OF METRIC TONS)

	Coffee*	Cotton	Sugar	Rubber	Cacao	Hides & Skins	Tobacco	Mate
1891-1900 . . .	7.5	15.9	133.6	21.4	10.4	24.7	21.2	26.6
1901-10 . . .	13.1	19.4	64.8	34.5	24.7	32.8	27.9	48.6
1911-20 . . .	12.1	15.1	62.4	32.9	43.9	45.5	28.0	72.2
1921-30 . . .	14.0	22.8	81.0	20.3	63.3	56.9	33.7	85.0
1931-40 . . .	14.7	155.1	40.1	11.6	107.7	49.7	29.7	65.0
1941-50 . . .	13.8	195.8	68.7	12.3	107.1	49.4	30.0	49.6

*In millions of bags of 132 lb. each.

PRINCIPAL EXPORTS AS PER CENT OF TOTAL VALUE OF EXPORTS

	Coffee	Cotton	Sugar	Rubber	Cacao	Hides & Skins	Tobacco	Mate
1891-1900 . . .	64.5	2.7	6.0	15.0	1.5	2.4	2.2	1.3
1901-10 . . .	51.3	2.1	1.2	28.2	2.8	4.3	2.4	2.9
1911-20 . . .	53.0	2.0	3.0	12.1	3.6	6.2	2.6	3.0
1921-30 . . .	69.6	2.4	1.4	2.6	3.2	4.6	2.1	2.7
1931-40 . . .	51.5	14.3	0.5	1.1	4.1	4.4	1.5	1.7
1941-50 . . .	43.2	11.3	0.9	1.1	4.3	3.5	1.6	0.7

SOURCES: Basic data from Ministério da Fazenda, Directoria de Estatística Econômica e Financeira do Tesouro Nacional, *Comércio Exterior do Brasil*, anos 1932-1936, No. 1-C.E., Rio de Janeiro, 1937; Ministério da Fazenda, Serviço de Estatística Econômica e Financeira, *Comércio Exterior do Brasil*, 1933-1937, Rio de Janeiro, 1940, *do.*, *Comércio Exterior do Brasil*, various issues of annuals, monthly summaries, and series on specific commodities.

TABLE II.18
BRAZIL: VALUES OF IMPORTS AND EXPORTS—TOTAL TRADE AND TRADE WITH
UNITED STATES, 1901-51
(IN MILLIONS OF DOLLARS)

YEARLY AVERAGE OR YEAR	TOTAL TRADE		TRADE WITH UNITED STATES	
	IMPORTS	EXPORTS	IMPORTS	EXPORTS
1901-05	123	195	14	83
1906-10	189	270	24	100
1911-15	238	293	42	111
1916-20	295	366	127	152
1921-25	277	355	69	148
1926-30	378	407	106	192
1931-35	170	240	41	102
1936	247	320	55	124
1937	331	348	76	126
1938	295	296	72	101
1939	261	305	87	110
1940	251	265	130	112
1941	280	360	169	205
1942	236	403	127	184
1943	314	470	168	238
1944	409	579	250	307
1945	442	661	244	326
1946	671	981	391	414
1947	1,217	1,152	746	447
1948	1,121	1,180	581	511
1949	1,103	1,096	468	550
1950	1,085	1,355	374	739
1951	1,986	1,769	831	867

SOURCE: Original data compiled from official reports of Ministerio da Fazenda; conversions made in accordance with exchange ratio used by U. S. Department of Commerce, Office of International Trade.

NOTE: Export and import figures in this table cover merchandise trade and gold and silver bullion, but not specie. In practice, gold and silver movements through the customs are minor.

Brazilian Agricultural Development

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IN THE COURSE of more than four centuries Brazilian farmers have had ample opportunity to find out about the qualities of the land they occupy. In fact, many are the illiterate backlanders who have found out the hard way about the soils and the climate, but who have not been able to generalize their experience; and numerous also are the Brazilian scholars and agricultural engineers who have a clear understanding of the nature of the problem they face. But in between are millions of uninformed people: the majority of the people in cities and towns, even the majority of the large landowners, and unfortunately most of the political leaders. To the average Brazilian the *sertões*, the backlands, are deeply mysterious. They exert a force of attraction because of the firm belief that in them is to be found the means of achieving great wealth; yet at the same time they repel because they are so empty and have yielded so seldom to the economic efforts of their inhabitants. Few indeed are the political leaders who do not see in Brazil's future a *marcha para oeste*, a vastly profitable movement away from the coast into the empty interior, a final conquest of the lands of mystery.

People who know Brazil well, and who have a deep love for that country, are nevertheless skeptical about the possibilities of agricultural and pastoral development in the backlands. To many Brazilians such skepticism is a form of disloyalty, yet it seems necessary to present the argument for the skeptical view before there is disaster.

This paper will present evidence in support of three major conclusions:

1. That the kind of land suitable for a continuation of the traditional exploitive agriculture is nearing exhaustion, and the still unused areas are now so remote from the urban markets that their development must be accompanied by a further rise in the already high cost of living in the cities.
2. That modern scientific farming is entirely feasible in Brazil, and that its application either to worn-out soils or to soils of

low natural fertility can greatly increase their productivity and lower the cost per unit of food production.

3. That if and when modern scientific agriculture is adopted by the Brazilian landowners, instead of providing a basis for the expansion of the frontier of settlement westward into the now thinly peopled backlands, it will have the opposite effect, leading rather to a decrease of population in the thinly peopled areas and a further concentration of people in the already densely populated places.

THE TRADITIONAL AGRICULTURAL SYSTEM

The traditional agricultural system in Brazil is one in which human effort is largely unaided by capital.¹ The resource base, enormous in size but poor in quality, has been asked to provide quick returns for a minimum of investment. From time to time, and in particular places, the particular combination of land and land use has been found which could bring speculative profits; and whenever and wherever this combination was found the result was crop specialization—monoculture. But as soon as the exhaustion of the soil or increasing competition with other producers resulted in a decrease of quick profits, such capital as was available was turned elsewhere to new sources of speculative gain. Never have large numbers of Brazilian producers followed the classical economic procedures of Anglo-American theory by investing more capital in the better-suited areas and thus lowering costs per unit.

The economic history of Brazil is divided into periods during each of which a certain kind of product was vastly profitable.² There was the sugar period of the sixteenth and seventeenth centuries; there was the period of gold and diamond mining in the eighteenth century; there was the period of coffee planting which began in the last century and came to an end in 1930; and there were smaller agricultural flurries in rubber, cacao, oranges, sisal, and others. When large speculative gains could not be had, smaller but still quick profits were taken from the cultivation of rice and cotton. And when all else failed, as has been so commonly the case, the basic support for rural settlement was found in the pasture of cattle.

All these agricultural cycles, and the basic pastoral economy on which they stand, have a geography as well as a history. Each kind of monoculture has left its imprint on a specific region; and the whole system of exploitive cycles resting on a pastoral base is largely confined to one kind of country. This is the basic geographic fact which is so often overlooked in analyses of Brazil's economic problems.

¹ See the *Report of the Joint Brazil-United States Technical Commission*, U. S. Department of State publication no. 3487 (Washington, D. C., 1949).

² P. E. James, *Latin America* (rev. ed.; New York, 1950), pp. 354-523; T. Lynn Smith and Alexander Marchant, *Brazil, Portrait of Half a Continent* (New York, 1951).

Slash and Burn Farming

Brazilian agriculture is characterized by rotation of land. This means that instead of using any one field for a succession of crops over a period of years, the lands used for crops are changed, passing through a cycle of clearing, planting, shifting to pasture, and eventual return to forest. Land rotation, applied to a seemingly limitless area, has resulted in spreading the rural population thinly, and in creating a notably unstable pattern of settlement, a lack of attachment of people to place.

On any one piece of land the sequence follows roughly along the following lines.³ A large area of forested country comes into the possession of a large landowner. The large landowner is traditionally interested in cattle and much less interested in the hard labor of clearing forests and planting crops. He welcomes the tenant farmer or sharecropper. The latter stakes out a portion of the forest and starts the arduous work of clearing it. He cuts all but the larger trees and awaits the end of the dry season to burn the tangle of branches and withered foliage. During this time he and his family live in a temporary grass hut. After the burn, he plants a crop in the spaces between the charred stumps and half-burned trunks of the forest. On soils from which the accumulated organic matter has not been entirely burned away, and which are enriched by wood ashes, he gets good yields for his maize, rice, beans, or manioc. But after a few years, usually not more than three, when yields begin to decline, he plants grass in the old clearing, and moves to a new area. The large landowner, therefore, has pasture for his cattle. He takes no care of the pasture, however, and gradually the second growth vegetation of scrubby trees invades the pasture, the grass is choked out or overgrazed, and the field is abandoned again to the forest. In the course of four centuries, vast areas of Brazil have been cleared and abandoned, not once but again and again.

This kind of agriculture has been largely applied to one kind of country. It is not applied to the grasslands, partly because pasture already exists in these areas, and partly because some of the grasslands are on soils so poor that crops do not repay the effort of planting them. It is applied to forested areas. But of the forested areas, the selva, or rain forest, is too dense and wet, and the soils under it so deeply leached by the heavy rainfall, that few parts of this region are occupied by farmers (Map 1).⁴ The caatinga, or scrub forest of the Northeast, is subject to such droughts that when this system of land rotation was applied to it not only the tenant farmers but also the pastoral landlords have remained very poor. In the

³ T. Lynn Smith, *Brazil: People and Institutions* (Baton Rouge, La., 1946), pp. 37-60.

⁴ The maps are based on compilations previously published in *Latin America* and revised on the basis of new field observations made during 1949 and 1950 when the writer was in Brazil as technical consultant for the *Conselho Nacional de Geografia*. The writer has been in the field in every part of Brazil except the Amazon forest region during 1930, 1938, and 1949-50.

Araucaria forest of South Brazil, where pines reflect the recurrence of frosts, the kinds of crops are restricted. The greater part of the agricultural effort of Brazil over four hundred years has been applied to the area of tropical forest, the stippled area on Map 1.

MAP 1. NATURAL VEGETATION OF BRAZIL



To the person who thinks Brazil's agricultural area is as large as the vast national territory, it comes as a shock to find that after four centuries of experience Brazilian agriculture is largely restricted to a part of country which is relatively small in area.

The Tropical Forest Lands

The tropical forests of Brazil are made up of a mixture of deciduous and evergreen broadleaf trees. They are not entirely evergreen, like the selvas, except in a few very rainy spots as along the coast of São Paulo; nor are they entirely deciduous like the caatingas. The Brazilians recognize two chief kinds of tropical forest: the *mata da primeira classe*, or first-class forest, in which the presence of palms reveals good soil and

Certain general observations concerning the soils can, nevertheless, be formulated. On the crystalline rocks, for example, some of the best soils in Brazil for shallow-rooted crops are developed. Gneisses in which biotite is an important mineral produce a reddish clay soil, which, under the tropical forest, contains a fair amount of organic matter. Gneisses in which muscovite is a major constituent, however, produce only poor, white, sandy soils. Such soils are usually covered with *mata seca*, or even with poorer vegetation types. Where the underlying rock is quartzite, the superior resistance of this rock to the processes of erosion is revealed by the presence of groups of hills or rounded low mountains. The soils in these places are apt to be thin and gravelly, but the heavy rainfall may be sufficient to support a forest. The ancient crystalline rocks of the Brazilian highlands are partially covered by sandstone strata, in process of being stripped away. Where the sandstone cap remains, the result is a tabular upland—with steep sides and flat top. The soil on such an upland is light colored, sandy, and of little sustained fertility. Not all the area shown on Map 2 as tabular upland is underlain by sandstone. A large part of *Planalto Central* is developed on crystalline rocks which in past geologic ages were beveled by the process of stream erosion. This ancient erosion surface has been exposed for a very long time to the leaching action of the rain, and exhibits today some of the poorest soils of Brazil. Large parts of southern Brazil, and smaller patches occupying areas too small to appear on Map 2, are underlain by layers of a volcanic rock known as diabase, on which the famous *terra roxa* soil develops. This is a purplish-colored clay soil which has been found ideal for tree crops such as coffee, but not so good for shallow-rooted crops like cotton. In its original condition under a *mata da primeira classe* the *terra roxa* is deep and porous; but when the forest is cleared and the soil exposed to the sun and rain, it quickly dries out and cakes, after which it gullies with alarming rapidity during the first heavy shower. A general picture of the arrangement of these various land conditions is presented on Map 2.

THE PROGRESS OF AGRICULTURE

The development of agriculture in relation to this resource base is a story which runs over more than four centuries. There have been cycles of speculative development with certain common characteristics but each applied to a different part of Brazil's vast territory. The first of the cycles of resource exploitation which dominated the early years of Portuguese colonization in America was devoted to the collection and export of *Pau Brasil*, the dye-wood which was found in the forests of Northeast Brazil. The area cleared in the search for this resource was in a narrow band along the coast of Pernambuco and Alagoas, chiefly between Recife and Maceió.

The first of the three major cycles was given over to the production of sugar cane. It started during the second quarter of the seventeenth

century and continued until roughly 1700. The sugar cycle was concentrated chiefly in Pernambuco, on the hilly country southwest of Recife, in the Recôncavo of Bahia near Salvador, and during the later years of the cycle in Rio de Janeiro and southern Minas Gerais.

Although statistical data regarding the agricultural system of this period are thoroughly unreliable, the progress of agriculture can be followed cartographically with considerable precision, and the nature of the economic system can be understood quite clearly.⁵ The Portuguese came to America much less imbued with zeal for the spread of Christianity and the establishment of Christian institutions than were the Spaniards. The Portuguese were traders, looking for ways to achieve wealth; and trading in those days was always a speculative matter, if only because of the hazards of the sea. Money invested in an economic venture must pay off quickly and abundantly, or it was totally lost. With this attitude the Portuguese who came to Pernambuco and Bahia were quick to seize the opportunity offered by the land. Sugar was at that time an exotic product, sold in apothecary shops for its medicinal value. In Europe sixteenth-century cookbooks do not mention sugar. But sugar sold at a low price and in quantity could command a vast potential market. In northeast Brazil, after a few years of experiment with Indian slaves, the Portuguese who were already familiar with Negro slaves in Lisbon started the importation of Africans. Here was an economic situation of vital importance: people with a commercial attitude and a zeal for quick profits; free land and a supply of good agricultural workers just across the ocean; a new product on a market which was expanding at a faster and faster rate. The planters had their first "success experience" in speculative production.

Meanwhile, in the Northeast not all the large landowners were sugar planters. The concentrations of people in the relatively small areas devoted to sugar cane had to be supplied with food, chiefly meat. During the sugar cycle the largest single property in the whole region was the great ranch described by Pedro Calmon in his *História da Casa da Torre*.⁶ The property extended for several leagues southward from the lower São Francisco, covering a large part of Sergipe and northeastern Bahia. The first penetration of the caatingas of the Northeast was by pastoralists from whose vast properties the half-wild cattle were rounded up and driven to the market towns on the margins of the zone of concentrated settlement. From among the ranchers were recruited the soldiers who attacked and finally drove out the Dutch invaders. In the Northeast, therefore, four hundred years ago the fundamental and traditional elements of the Brazilian agricultural picture were all present: the large planter, interested in quick profits from a commercial crop; the mass of very poor workers who

⁵ For reference to sources dealing with Brazil, see R. Borha de Moraes and W. Berrien, *Manual Bibliográfico de Estudos Brasileiros* (Rio de Janeiro, 1949).

⁶ Pedro Calmon, *História da Casa da Torre* (Rio de Janeiro, 1939).

carried the burden of clearing the forest, planting, harvesting, and transporting the crop; the pastoralists interested only in more and better pasture for animals, but willing to permit farmers to occupy small parts of the vast ranch areas because one result of this agricultural use was the clearing of the forest and the formation of planted pastures.

Why, then, did the period of speculative profits in sugar cane come to an end? Why did the planters not invest the capital they had accumulated, in better sugar machinery in order to lower their costs of production and so maintain their competitive position in the still expanding world sugar market?

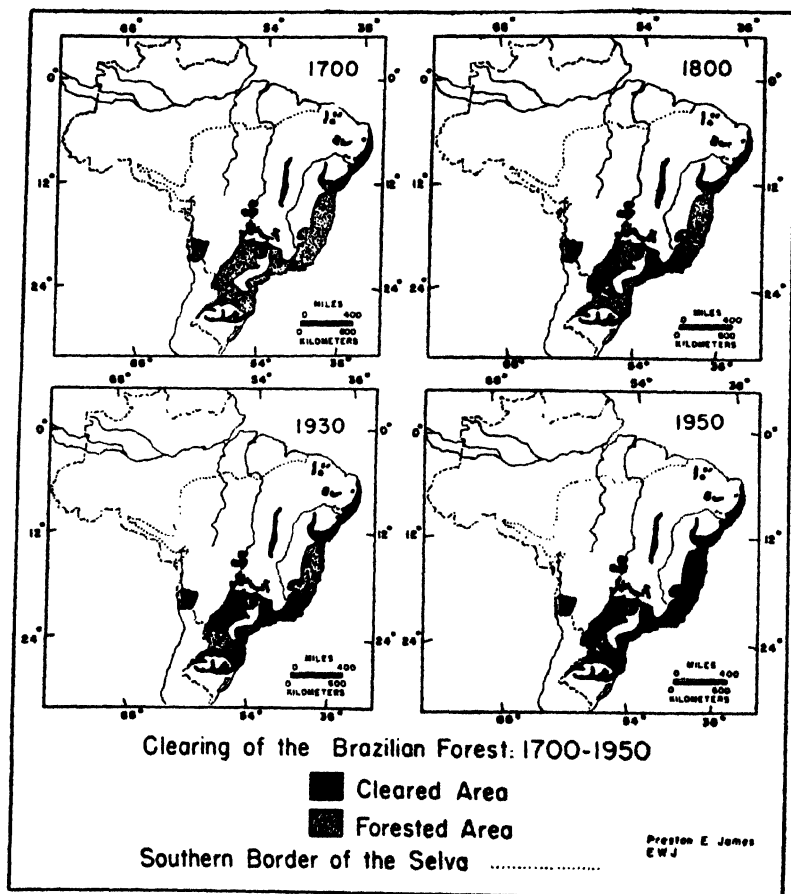
When the Dutch planters were driven out of Brazil, they turned their attention to the unoccupied forest lands between the Portuguese settlements on the lower Amazon and the Spanish settlements on the Orinoco. They went to work on the swampy coastal plan of the Guianas. But they also occupied several of the small islands of the West Indies. In Guiana they found many of the geographical handicaps which were also present in Brazil. Slaves could escape and disappear in the vast interior; and the plantations had to send the product over miserable roads to a port where ships could find a protected anchorage. In the West Indies slaves could not escape; and each plantation could have its own dock. Also the West Indies were considerably nearer to Europe. The Dutch, and also the French and English, were quick to take advantage of the opportunities offered by these smaller islands of the West Indies, and were able to sell sugar in Europe at prices that cut deeply into the speculative profits of the Brazilian planters.

In Anglo-American experience the planters should have invested larger sums at least in the plantations where climate and soil combined to offer the best natural conditions, and so reduced the costs per unit of sugar that they could continue to compete with the West Indies. There is no reason to believe that the investment of the capital accumulated from over a century of big profits could not have maintained the Brazilian position. But there is a fundamental difference in the basic economic attitude of the Anglo-Americans and the Portuguese. Not that Anglo-Americans would refuse to accept speculative gains if they could be had; but the Anglo-Americans have generally been reluctant to abandon a production enterprise even when large initial gains were no longer possible and have preferred to seek to increase production at lower cost per unit by the investment of more capital. Not so the Portuguese. Unless invested capital could be quickly returned, it seemed better to withdraw from a particular product and even from a particular region, and seek speculative profits elsewhere. And in Brazil there has been just enough success in this operation to keep alive the hope of sudden wealth. *Fique Rico* is the slogan of the federal lottery in Brazil: it means "Get rich." The advice is deeply embedded in the Brazilian character.

About 1700 gold was discovered in Minas Gerais, inland from Rio de

DESTRUCTION OF THE TROPICAL FOREST AND THE ARAUCARIA
PINE FOREST OF BRAZIL

MAP 3	1700	MAP 5	1930
MAP 4	1800	MAP 6	1950



Janeiro. The map for 1700 (Map 3) indicates the areas which had been cleared either for sugar cane, or, in the traditional system of slash and burn, for the temporary production of food crops and the eventual pasture of grazing animals. At the beginning of the gold period, the pastoralists had already moved along the roads inland from Rio de Janeiro and had started the destruction of the forests of the Southeast. The arrival of the gold miners, many of them wealthy sugar planters with their slaves, resulted in a new wave of forest clearing, and the rapid expansion north-

ward of the pastoral economy with its associated pattern of shifting agriculture.

The tradition of quick profits was continued and reinforced by the experience of the gold cycle of the eighteenth century. There was only placer mining, which requires a minimum of investment. In very few places was vein mining attempted. When the richest gold and diamond-bearing gravels were discovered and exploited, the persons who had profited from the mining cycle were ready to seek still another source of quick gain. By 1800 the region of Brazil in the hinterland of Rio de Janeiro, the Southeast, had been occupied and its forest was largely gone. This situation is shown on Map 4.

The third of Brazil's major cycles was that of coffee, which was getting underway during the first decades of the nineteenth century, and which came to an end in 1930. The coffee cycle swept across the previously cleared lands of southern Minas Gerais and pushed the forest northward in eastern Minas Gerais and Espírito Santo, but the main concentration of coffee planting was in the state of São Paulo. The extent of clearing in this period is shown on Map 5. In addition to coffee, some new clearings appeared in the states of the South where German, Italian, and Polish colonists had established their settlements. Also in southern Bahia, south of Salvador, a zone of new clearing was developed by the cacao planters. Here also the system was speculative: investment was made with the prospect of quick return, and measures for even the maintenance of the soil, let alone its improvement, were neglected. On the coffee plantation coffee was and still is grown without shade because this permitted a greater concentration of trees per acre.

The Role of the Paraíba Valley

Throughout the last 250 years the Paraíba Valley, north of Rio de Janeiro, has played a special role. This was the area first cleared to provide the mining people of Minas Gerais with meat, rice, and beans. From the first clearings on the hilly margins of the valley, tenant agriculture followed by the basic pastoral use crept northward through the forest of southern Minas Gerais. As planters with their slaves experienced in cane cultivation entered this region during the eighteenth century, a considerable area of hilly land was used for sugar cane, but always on a land-rotation basis, with the underlying regional economy based on cattle, and with pasture occupying the largest part of the total acreage of cleared land. In the Paraíba Valley, midway between Rio de Janeiro and the goldfields, the second-growth forest could scarcely make its appearance before it was cut again, partly to make pasture for cattle, partly for charcoal.

Early in the nineteenth century, the first place where coffee plantations were set out on a commercial scale was along the hilly southern margin of the Paraíba Valley, and in 1850 this region was the chief center of coffee production. The life of unshaded coffee trees on the soils of

this region, however, was not long: after a decade or so yields began to decline seriously, and planters moved northwestward into São Paulo State, where the peculiar qualities of the *terra roxa* were soon discovered. By 1910 most of the coffee had disappeared from the Paraíba Valley.

During the 1920's the floodplain of the Paraíba was first put to use on a large scale. The crop was rice, which could be marketed with good profit in nearby São Paulo and in Rio de Janeiro. The increase of land values brought great wealth to the landowners from unearned increment. During the 1930's still another speculative cycle began in the valley when orange orchards were set out, again on the steep hilly lands where coffee had formerly been grown.

One speculative cycle after another has been initiated in the Paraíba Valley. From this nucleus each new crop has spread: northward into Minas Gerais; westward into São Paulo. The reason for this repeated use of the Paraíba Valley for the first large-scale development of new speculative types of production is its location along the main line of transportation between the two great cities of Brazil, Rio de Janeiro and São Paulo, both now over two million in population. Today the beginnings of scientific agriculture are to be observed in this same valley.

As a result of these speculative cycles, however, the Paraíba Valley soils have been destroyed. After repeated clearing of the scrubby forest growth, repeated burning, and continued soil erosion, the land has become so deeply leached and so little organic matter remains that now not even trees can invade the overgrazed pastures. The landscape along the hilly margins of the valley reminds one of certain of the drier parts of Texas. Similarly much of southern Minas Gerais suffers today from a lack of wood even for charcoal.

Current Trends

Brazilian statistics do not permit a reliable quantitative description of the progress of Brazilian agriculture. Before 1938 even the outlines of the *Municípios* were not co-ordinated by the federal government. In 1931 it was estimated that in Brazil as a whole 10 million hectares were in use for farming. Since that date the cultivated area has increased continuously, except in 1934, 1936, 1941, and 1942. In 1948 it was estimated that the croplands of Brazil totaled 15.7 million hectares. This means that there had been an increase of the farmed area of more than 50 per cent in the 17 years between 1931 and 1948. But the possibility of error is so large even in these years that it is not safe to place any large confidence in the figures. Only since 1945 have the statistical services and the geographical agency that co-ordinates the boundaries of the minor civil divisions been able to produce comparable statistics outside of São Paulo State.

Nevertheless, the map shows a very large increase of cleared area between 1930 and 1950. There is no doubt that a large part of the

forest of western São Paulo was occupied and cleared during this period. The process is described with a wealth of detail by Pierre Monbeig.⁷ After 1930 the large coffee planters, finding speculative profits reduced, were renting their properties to small farmers, or subdividing them and selling out in order to place their surplus funds in the construction of apartments and office buildings of Rio de Janeiro and São Paulo, and to a lesser extent in manufacturing industries. The pioneers who were clearing the forest on the frontier after 1930 were small owners with little capital; and the crop they grew, also with the hope of quick profits, was cotton. In recent years, this flow of pioneers has moved westward into Western Paraná and Santa Catarina, northward into Goiás, and northward into northeastern Minas Gerais and southern Bahia. The present situation is shown on Map 6.

Although no reliable quantitative picture of agricultural production as a whole, or of production per capita, can be given, certain facts are suggested by both statistical estimates and by direct observation. It is certain that Brazil has one of the largest net rates of population increase of any country in the world. Its birth rate is above 40 per thousand, and its death rate exceeds 20 per thousand. In 1920 there were some 30 million Brazilians; in 1940 there were about 41 million; and the preliminary returns of the 1950 census indicate a population of about 53 million. Furthermore, although there has been an increasingly rapid migration of people from the rural districts into the expanding cities, especially Rio de Janeiro and São Paulo (but to a certain extent to all the state capitals), the rural population has nevertheless continued to increase. The Abink report⁸ estimates that although there has been a more rapid expansion of crop production than of population, the productivity per rural farm worker is low and has probably declined. The total crop production in 1946-47 was 10 per cent above the total production of 1937-39, and 17 per cent above that of 1934-36. On only 23 per cent of the farms in 1940 was there any agricultural machinery in use. The prevailing instruments are the hoe and the machete, and the power is furnished by human muscles. In spite of our difficulty of measuring the situation, we can be certain that agriculture as a whole in Brazil is prodigiously wasteful, inefficient, and costly.

COMMERCIAL CROPS

Just how inefficient and costly Brazilian agriculture actually is can probably best be presented by a consideration of some of the leading crops in the present-day picture. We shall discuss four: sugar cane, coffee, cotton, and rice.

Sugar Cane

Most of Brazil's sugar is still produced in small mills. Something

⁷ P. Monbeig, *Pionniers et Planteurs de São Paulo* (Paris, 1952).

⁸ *Op. cit.*; see n.1.

like 70 per cent comes from mills with capacities of less than 1,000 tons of cane per day. Detailed analyses of production methods by technically skilled engineers indicate that there is a great loss in the process of extracting the juice from the cane because of the small scale on which the operation is carried out. It is estimated that an investment of more than seven million dollars in large mills capable of handling between 2,000 and 4,000 tons of cane per day would be justified by increased sugar production without any increase in the amount of cane grown. There may be some doubt about a figure of this sort, based on an analysis of national statistical averages with no regional breakdown, but the fact cannot be denied that with large capital investment Brazil's sugar could be produced at lower cost per unit.⁹

There are a number of aspects of this problem which are obscured by the use of national averages. For example, about 60 per cent of the sugar cane of Pernambuco, Brazil's leading sugar state, is grown on hilly land, on slopes between 12 and 25 degrees. After centuries of use the volume of soil erosion has been terrific, and the yield per hectare is only about 30 tons (as compared with 120 tons in Cuba). In addition, the hilly terrain prohibits the use of machinery: the cane fields are cultivated and the cane is harvested by hand; the cane is transported on donkey back or oxcart. It seems probable that if competition even within the Brazilian national market were entirely free, cane-growing would largely disappear from these hilly lands which make up the major part of Pernambuco's sugar area. But competition is not free. The Instituto de Açúcar e Alcool, the government agency charged with supervision of the whole sugar industry, protects the cane plantations of the Northeast against the competition of more efficient and lower cost sugar from other states, especially from São Paulo. The Institute taxes each planter a percentage of his costs of production: the *Paulista* planter pays 13 per cent of his costs while the planter in Pernambuco pays only 6 per cent. The Institute has not been enthusiastic about the investment of new capital in more efficient mills, for this investment would probably be made in São Paulo rather than in Pernambuco. It is believed that the decline of sugar-cane planting in the Northeast would bring social disaster to that region.

Not all the sugar planters of the Northeast, however, are small-scale operators on hilly land. The more progressive planters have moved from the traditional use of hillsides to the establishment of cane plantations on the fine alluvial soils of the valley bottoms. Yields per acre on flood-plain soils, after suitable drainage and flood protection systems have been built and with the application of fertilizer, are as much as 80 to 100 tons per hectare. But the area of floodplain soils is small, and the number of progressive planters few.

Another important fact concerning sugar production in Brazil, which

⁹ See the old but still valuable account of sugar-cane problems in G. de Carli, *Aspectos Açucareiros de Pernambuco* (Rio de Janeiro, 1940).

is lost to view in statistical data for the country as a whole, is the fact that a considerable part of the sugar produced in the Northeast does not enter the national market at all. There are many planters who produce only for the regional market; and in the regional economic system the marginal producer is in no way comparable to the marginal producer in the national economic system. For the regional market cane is grown on very small properties, all on badly eroded hilly land where the yields per hectare are scarcely ten tons, and the sugar is extracted in small-scale *engenhos* with capacities of less than 100 tons of cane per day. The chief product is *rapadoura*, a kind of sugar cake which is eaten throughout the Northeast by old and young alike. So insistent is this demand for *rapadoura* that much land which could be used for such food crops as maize, manioc, or beans is not so used. It is not impossible that if the government should permit the process of competition to eliminate sugar production for the national market on the hilly lands of Pernambuco, these wetter lands would be used for *rapadoura* production, and the present still poorer lands which are now used for *rapadoura* might be put to use for the basic foods. The food deficiency, which characterizes the Northeast as a whole, might at least be somewhat reduced.

Coffee

Brazil's coffee cycle came to an end in 1930. After that date it ceased to be so profitable to grow this crop as it was when the government was guaranteeing the purchase of all that could be produced. In 1934 the number of coffee trees in Brazil was 2,978 million. By 1950 the number had dropped to about 2,000 million and by 1960 it is estimated that another billion trees will have gone out of production. The difficulty is that new planting has greatly declined since 1930; and what new planting there is has been chiefly on poor soils where the life of a tree is short.

An examination of the map of kinds of land (Map 2) shows that there is actually very little *terra roxa* soil (diabase plateau) in São Paulo State. To the south, where the diabase is much more extensive, the recurrence of frost (reflected in the presence of Araucaria Pine—Map 1) prohibits the planting of coffee. In northern Paraná, in the zone of infrequent frosts, large speculative profits were being made in 1949 and 1950 from coffee trees just coming into bearing age on *terra roxa*, and, by unpredictable circumstances, spared up to then from killing low temperatures. The pattern of coffee plantations, even in 1920, showed a close correspondence to the pattern of *terra roxa* in São Paulo state; but by 1930 the wave of new planting had gone beyond the *terra roxa* onto the poor sandy soils of the tabular upland to the west, and on *massapé* in eastern Minas Gerais and Espírito Santo (Map 6).

The result of this expansion beyond the *terra roxa* was an enormous decrease in the productive life of the coffee plantations. Even in *terra*

roxa the Brazilians always plant without shade trees and thereby crowd many more coffee trees into a hectare and derive quicker profits than could be done with shade trees. Even if shade trees would have preserved the soils from drying out and from rapid erosion and would have lengthened the life of the coffee trees, such practice would be foreign to the Brazilian tradition. In short, it would have been uneconomic in terms of Brazilian economics. Even without shade, a coffee plantation on good *terra roxa* soils, such as those around Ribeirão Preto in São Paulo State, yields well for as much as sixty years. In contrast, the productive life of a plantation on the sandy soils of the tabular uplands of western São Paulo (Map 2) is only from 20 to 30 years. On the *massapé* soils of Espírito Santo coffee trees yield for only about 8 years.

The center of coffee production is still São Paulo State. This state also is the leading producer of oranges, cotton, rice, and many other commercial crops. The diversification which can be demonstrated statistically since 1930 unfortunately does not apply to the crops on individual farms. So far as commercial crops are concerned, each farm specializes; and land rotation, with longer periods under crops, is still characteristic. The chief use of the land, even in the coffee areas of the state, is still for the pasture of animals.

Cotton

Cotton is a commercial crop, like sugar cane and coffee; but most of it is grown in Brazil by small tenant farmers. It is grown as a part of the system of land rotation with maize, rice, beans, and manioc. Since 1934 São Paulo has become the leading producer of cotton, which has replaced coffee in many of the older coffee areas.

Cotton can be produced in São Paulo at lower cost per unit than in any other state of Brazil, in part because of a system of grading which insures uniformity of the product. But in the international market, São Paulo is not a low-cost producer. It takes about 640 man-hours to produce a bale of cotton in São Paulo State: in the hilly piedmont area of the southeastern United States, from which the development of cotton machinery has caused cotton-planting largely to disappear, it used to take 256 man-hours.¹⁰ The yield per acre in São Paulo is only 135 pounds, compared with 242 pounds on the piedmont of the United States. If per-acre yields in São Paulo were equal to those of the piedmont of the United States, labor costs would be a third less. Even in São Paulo, where living standards are higher than in other parts of Brazil, the per-capita productivity of workers is low. It is low because of bad health and inadequate diet; because productivity is low, wages remain low, and because of low wages the diet remains inadequate and diseases due to bad hygiene are prevalent. São Paulo cotton, too, is produced on soils which are poor for cotton, and which erode rapidly when the forest is cleared.

¹⁰ Figures by Henry W. Spielman.

In spite of a generally very good cotton climate, *Paulista* production is costly; and the tropical forest area suitable for cotton is almost all gone (Map 6).

Rice

Rice is the basic food of Brazil. Along with beans and dried meat it is eaten every day by the great majority of the Brazilians. It is grown under all kinds of conditions in all parts of the country. In 1948 there were more than four million acres in rice, which was more than double the prewar average. Something like 78 per cent of the rice is upland rice, dependent for its yield on natural rainfall. Three quarters of the acreage devoted to rice in Brazil is in the Southeast and São Paulo. But 25 per cent of the total Brazilian production is grown on about 12 per cent of the total rice acreage in the Jacuí Valley of Rio Grande do Sul, where it is irrigated. Other irrigated areas, in the Paraíba Valley and along the lower São Francisco, are too small to notice in the total national picture. Furthermore, the upland varieties are preferred and bring higher prices on the markets. In the Southeast and São Paulo, the population, and hence the demand for rice, is increasing more rapidly than the rice production of this area, with the result that larger and larger quantities must be shipped north from Rio Grande do Sul.

Most of the upland rice is grown in small fields by tenant farmers as part of the traditional system of land rotation. The average tenant farm family throughout Brazil produces rice each year on about ten acres. Most of the product is consumed by the family, but there is usually a small surplus for sale. The large surpluses come from the virgin soils of newly cleared forests. These tenant farmers use no machinery, cultivate chiefly with the hoe and the machete, using hilly lands up to 35 degrees of slope. In the older lands the yield per acre is small: when it drops to the point where it no longer feeds the farmer and his family, the land passes permanently into pastoral use. Such is the situation along most of the hilly margins of the Paraíba Valley, and over wide areas in Minas Gerais.

THE FRONTIERS

Agriculture in Brazil has been located in the relatively small part of the whole country covered originally with tropical forest. Little by little the parts of the tropical forest closest to the big urban markets have been destroyed by exploitive farm practices. The great cities of Brazil, especially Rio de Janeiro and to a lesser extent São Paulo, are surrounded by land that is empty because it has been destroyed. Meanwhile the frontier, which is hollow,¹¹ has moved farther and farther away from the markets. Even with the motor truck to cut the transportation costs, the continued advance of the frontier is supported by a continued rise of food prices. Rising costs of living put pressure on the new manufacturing industries to

¹¹ P. E. James, "The Changing Patterns of Population in São Paulo State, Brazil," *Geographical Review*, XXVIII (July, 1938), 354-362.

increase wages; and wage increases drive food prices always higher. The biggest speculative profits today in Brazil are being made in nonproductive building construction in the cities, and into this kind of enterprise more and more Brazilians with capital are putting their money to get quick returns. But in agriculture speculative returns are to be had temporarily on certain of the pioneer frontiers far in the interior.

The South

Three such frontiers are of major importance today in Brazil. One is western São Paulo, western Paraná, and western Santa Catarina.¹² Perhaps the most successful pioneer area today is in northern Paraná, where there are some lands suitable for coffee, and others which must be used for annual crops. Yet even in this area Leo Waibel has noted a gradual shift away from stabilized agriculture to the traditional Brazilian system of land rotation.¹³ Unless stabilized agriculture, based on crop rotation and the fertilization of fields with animal manures, is adopted, the farm sizes in the German, Italian, and Polish colonies of the southern states are too small to support a family. Yet Waibel reports that only 5 per cent of the colonists have been able to establish a permanently workable system; nearly half of the European colonists, practising land rotation, have now destroyed a large part of the remaining belt of tropical forest on the Paraná Plateau. The next step is to experiment with agricultural settlement of the open prairie grasslands, or *campo limpo* (Map 1), which have hitherto been mostly reserved for pasture. The first colonies on these grassland soils are reported to be successful.

Espírito Santo and Eastern Minas Gerais

Another frontier has been moving forward into the forest in northern Espírito Santo and northeastern Minas Gerais north of the Rio Doce. In this same area is the south-moving frontier along the coast of Bahia, south of Salvador, where cacao is the commercial crop. Outside of this specially suited cacao area, however, the crops of this frontier are coffee, cotton, and rice.

As long as virgin soils can be found, rice and cotton yields are large enough for the first few years to bring attractive profits. New coffee reaches bearing age in about six years, and produces thereafter for about eight years. The land is then planted with grass and drops back to the basic pastoral use. There is nothing permanent about this frontier, and the end of the area of uncut tropical forest is in sight (Map 6).¹⁴

¹² P. E. James, "The Expanding Settlements of Southern Brazil," *Geographical Review*, XXX (Oct., 1940), 601-626.

¹³ L. Waibel, "European Colonization in Southern Brazil," *Geographical Review*, XL (Oct., 1950), 529-547.

¹⁴ For additional materials on the pioneer colonies of Brazil, see the works of Pierre Deffontaines, Reinhard Maack, Pierre Monbeig, and others listed in *Manual Bibliográfico*.

The Goiás Frontier

The third of the pioneer frontiers in Brazil is the little island of tropical forest which lies in the midst of the *campo cerrado* in southern Goiás. In the last decade this little region has received more publicity than all the others combined, and is widely heralded by enthusiasts as the beginning of the long promoted *marcha para oeste*.

In the Goiás area the greater part of the forested lands was developed in the usual manner by tenants on large properties. The return to the basic pastoral economy was expected, and has already transformed more than half of the forested area to pasture. But there is also an important federal colony in this area, the *Colônia Agrícola*, in which 3,500 landless farmers, mostly from Minas Gerais, have been settled since 1945. To the west of the federal colony there are state colonies for small farmers now in process of being rapidly developed. Along the east side of the Rio das Almas, also, there are properties purchased by a number of distinguished persons from the United States who seem to imagine this remote spot as a refuge from the physical destruction which threatens the rest of the world.

The crops in this area include rice, cotton, coffee, maize, beans, and others. The price paid for a bag of rice in Anápolis, the chief market town of this frontier, is about 200 cruzeiros, 100 cruzeiros less than is paid in São Paulo City. Transportation to São Paulo per bag of rice costs only 35 cruzeiros. The remainder is absorbed by the middlemen who take full advantage of the lack of storage facilities to pay minimum prices to the farmers.

The Mato Grosso de Goiás is about 70 per cent cleared. In another five years the virgin forest will be gone. When it is gone, Brazil will suddenly come face to face with the end of a resource which has provided support for the traditional system for more than four centuries. For a long time thereafter tenant farmers can find second-growth forest to cut to make pasture for the large landowners. But as the intervals of forest growth become smaller and population pressure increases, the yields will decrease and costs will mount. Long before the economic system breaks down, social and political pressures would impose revolutionary change.

The Problem of the Grasslands

The greater part of interior Brazil, south of the Amazon selva, is covered by a mixture of scrubby deciduous trees and coarse grasses, known as *campo cerrado* (Map 1). There is considerable variety within this general category of vegetation; nor is it certain that some areas now covered with *campo cerrado* were not originally forested. It is possible that too frequent clearing and burning may make the return of the forest impossible, and lead to the development of an artificial *campo cerrado*. But there are vast areas which never were forest-covered.

One such area is the *Planalto Central*, the part of Minas Gerais, Goiás,

and Mato Grosso where the streams which flow either to the Amazon, the São Francisco, or the Paraná rise.¹⁵ The stream-divide is wide and flat—a geologically old land which preserves an ancient erosion level, long exposed to the destructive action of weather. The rainfall is heavy, but is concentrated in a wet season, with a long dry season between it and the next rainy period. The soil in such undisturbed places is about as poor as any soil in the world. Leached of its more easily soluble minerals, and eluviated by the downward percolation of the heavy rains, it is light-colored and sandy at the surface. Underneath there is a hard-pan of iron oxide, known as *cangá*, that can be broken up only with dynamite and bulldozers. For a long time the Brazilians have thought of this land as suitable only for poor pasture.

The places where the headwater streams have cut back into this *Planalto* the *cangá* has been cut away and underlying rocks exposed. In places the *cangá* holds up mesa-like remnants of the old surface; in other places a steep hilly terrain follows along the valleys and their chief tributaries. In such places there may be patches or ribbons of forest, too small to appear on maps of this scale. The Mato Grosso de Goiás occupies a hilly area cut into the *Planalto* by the headwaters of the Tocantins. Above the hilly areas cut by the streams the *Planalto* is marked by gently sloping depressions, or dales, into which vigorous erosion has not yet proceeded, but which offer some shelter, and some better agricultural possibilities not to be found on the *Planalto* itself.

What can be done with these lands? This is a vital problem for the future of Brazil. If, as some people believe, agricultural methods can be found to transform the *campo cerrado* into productive agricultural land, or even to create on it improved pasture, a large new resource base would be made available. But if the *cangá* lands can never be so developed, and if the patches of hilly forest land are too small and scattered to support a workable pattern of settlement, the interior of the country would have to be classified as very low in productivity—much lower than the tropical forest.

There have been some attempts at experimentation, most of them not highly successful. An attempt to plant cotton with machinery was a complete failure. A colony of displaced people, even supported by state aid in the form of machinery and by the earnest desire of the colonists to find a new home where they could remain without fear, is still dependent on outside sources of food. An Italian colony on *campo cerrado* land has developed deep soil erosion where it was plowed by machinery. A Brazilian businessman has been successful in producing rice in an area shown on the map as *campo cerrado* in Goiás, and shipping his rice by airplane to Rio de Janeiro; however, it has been found that the land he uses is actually a strip of alluvial soil, probably originally covered with a strip

¹⁵ L. Waibel, "Vegetation and Land Use in the *Planalto* Central of Brazil," *Geographical Review*, XXXVIII (Oct., 1948), 529-544.

of forest too small to appear on the small-scale maps available for this area.

It is clear that the area shown on Map 1 as *campo cerrado* is too highly generalized. This may be the predominant vegetation type; but it contains many small areas where other kinds of soil and cover conditions exist. For example, we have already noted that where the Amazon and Paraná tributaries cut back into the *Planalto Central* there are hilly areas, lower in altitude than the plateau, better supplied with water, and mostly covered with forest. There are strips of alluvial land along the deeper valleys. And it is quite probable that even where the vegetation cover is *campo cerrado*, some areas are better endowed with soil and water conditions than the average. Before any large-scale movement of new settlers into this vast, thinly populated section of Brazil is undertaken, however, it would seem to be imperative that careful land-classification surveys be undertaken in sufficient detail to identify and outline the areas where physical and other conditions are suitable for agricultural settlement. In the absence of such surveys, all forecasts of the agricultural resource base are no more than informed guesses.

But even if certain areas are found to be suitable for agriculture in this central part of Brazil, the factor of distance from markets remains to be considered. At present the inflationary rise of prices in the cities supports the movement of pioneers into more and more remote places. If rice can be flown nearly a thousand miles by airplane and sold on the market in Rio de Janeiro, this tells something of the prices people must pay for their staple food in the cities.

Experts recommend a somewhat different kind of economic development in these remote places.¹⁶ Instead of continuing the production of the traditional crops—maize, rice, beans, cotton, or coffee—and transporting these products long distances to ports or markets, as is still being attempted, it is necessary to transform them locally into more valuable goods which can more easily stand the high costs of shipment. Maize might be fed to hogs, and hogs transformed into lard. Cotton might be ginned near its producing center, manufactured into animal feed, oil, and even textiles. Manufacturing industries, using local raw materials, must be established in the towns of the interior. Storage facilities for food crops are needed to free the small farmer from the domination of the middlemen. In the absence of such storage facilities, middlemen extract large profits as the product moves from the remote interior to the city markets, which may well account for the reported success of the air shipment of rice since the producer in that case brought his own product to market. But before manufacturing establishments can be safely located, before it is worth while to pay the cost of extending and improving transportation

¹⁶ See the economic studies of G. Wythe, R. A. Wight, and H. M. Midkiff, *Brazil, An Expanding Economy* (New York, 1949); and H. W. Spiegel, *The Brazilian Economy, Chronic Inflation and Sporadic Industrialization* (Philadelphia, 1949).

facilities, and before storage facilities can be planned, it is necessary to know the size and shape of the areas of potential production. For if the suitable crop lands are arranged in long narrow ribbons along the rivers, the problem of assembling the products at a central point for shipment is serious indeed. Total figures of available acreage, even if accurate and reliable, are not enough. And certainly any serious attempt to move the capital of the country by decree into this central area, with the idea that once established it will result in an outward movement of new settlement, is dangerously ill-advised. The establishment of Belo Horizonte resulted in a decrease of population in the rural areas to the north as people flocked into the new city. Far from solving the food problem of Brazil, this would greatly aggravate it.

SCIENTIFIC AGRICULTURE

Scientific agriculture can be practiced on an economic basis. There is no doubt that today the existing character of the soil, whether because of human use or because of its natural condition, is not so important as it once was. It is possible to rebuild a soil through the use of machinery, green manure crops, and chemical or animal fertilizers. Terraces and other soil conservation structures can be used to preserve soil after it has been reconstituted. In fact, some soil scientists think that sandy soils may have an advantage over clay soils in that they yield more easily to the use of fertilizer. All these things have been demonstrated; and they have been demonstrated in Brazil.

Scientific Agriculture on a Large Scale

Near São José dos Campos, 110 kilometers by rail east of São Paulo city in the Paraíba Valley, a wealthy landowner named Olivo Gomes owns a *fazenda* of some 18,000 acres. The property includes some of the floodplain of the Paraíba, but also a considerable area of the poorest soils on the dissected terraces of the northern side of the valley. These are lands which have been through repeated cycles of monoculture, repeated clearing and burning, centuries of overgrazing and continued erosion. A better place for the demonstration of what scientific agriculture can accomplish would be difficult to find.

Sr. Gomes started by making a survey on large-scale maps of the land resource. He mapped the soils, slopes, and water occurrence. With the aid of machinery, technical advice, and new varieties of plants furnished by Nelson Rockefeller's American International Association for Economic and Social Development the worn-out land was transformed in the short space of two years. Hilly lands were terraced, floodplain lands diked; on deeply eroded soils green manure crops were planted and later plowed under. Hybrid corn was purchased from Rockefeller's International Basic Economy Corporation (which promotes new enterprises expected to operate on an independent basis like any other business). The *fazenda* now produces maize, beans, rice, wheat, and oats, and sells these

at a profit, even after deducting the cost of the improvements. In the Paraíba Valley, scientific methods could result in yields of 70 bushels of summer maize per acre, or 50 bushels of winter maize; 29 bushels of wheat, or 28 bushels of oats.

The land is in need of chemical fertilizer. The most expensive need is for phosphate, which is a high-cost item in part because so few farmers use it, and it must be imported. The use of bone meal and rock phosphate would be technically feasible and within the limits of cost. There is also a lack of calcium, which is also expensive. In the United States calcium costs about \$3.00 a ton; in Brazil it costs \$10.00. Yet there are calcium deposits in Brazil. Brazil could be self-sufficient in this important fertilizer if its resources were developed. Nitrate is also seriously needed. The use of the electric power being developed at Paulo Afonso Falls for the manufacture of nitrate from the air is suggested. For all these fertilizers the increase in the number of users would make lower prices possible.

But none of the neighbors of Sr. Gomes have yet turned to scientific agriculture. There are no speculative profits to be expected, no quick returns from capital invested. The application of these methods must be paid for by the enlarged market which could be expected if prices are lowered. This is an economic concept which is little known in Brazil.

Scientific Agriculture on a Small Scale

Sr. Manoel Carlos Aranha thinks scientific agricultural methods can best be applied on fazendas of 800 acres. Sr. Aranha's Fazenda Rio da Prata is located at Rocinha in the Município of Jundiaí about as far northwest of São Paulo City as Sr. Gomes' fazenda is east of that city.

Again the demonstration was applied to lands as thoroughly worn-out as any in the vicinity. This land at the Fazenda Rio da Prata was first cleared and planted to sugar cane in the eighteenth century. During the period of coffee expansion into São Paulo State, the land was used for coffee. After each period of monoculture it was returned to pasture, with intervals of land rotation when maize, rice, and beans were planted for the purpose of building new pastures. The land is hilly. It was deeply eroded.

Sr. Aranha has also made use of Rockefeller's organizations to get machinery, technical advice, and new crop varieties. He also has terraced or contoured his hilly land. A variety of crops are planted on rotation and fed to hogs and cattle. Manure from the cattle is provided for fertilizer. By applying machine methods he has reduced the number of tenant farmers needed to operate his fazenda from over 300 to less than 100. In about two years he has eliminated the gullies, and the yields of crops and the carrying capacity of pasture, as well as the quality of his animals, have all been greatly increased. There is no doubt that the experiment is profitable and that it carries a deep satisfaction to a land-owner imbued with a love of the land and its products. But it does not bring a quick return of capital invested.

The Prospects

There can be no doubt that scientific agriculture can be applied successfully to Brazil and that its application would result in an increase of both the quantity and the quality of food products and in a decrease of the cost of food. In fact, it is difficult to see how a country with so high a birth rate as that of Brazil can long avoid transforming its traditional exploitive agriculture to a farm system which provides more food at less cost per unit. If this change is too long delayed, the social and political consequences could be disastrous.

Scientific agriculture consists of a number of items. In the first place it must be based on the use of machinery to replace the hoe backed by human muscles. It must be based on crop rotation and crop diversification on individual farms; and the rotation system should include cattle on improved pastures. Soil conservation measures must be adopted to check the erosion of cultivated lands on steep slopes. Soils must be rebuilt with organic and chemical fertilizers. Landowners must accept the change from quick speculative profits to a more mature economic system. All these agricultural changes must be accompanied by controls of the middlemen, the establishment of financial institutions to assist farmers, the construction of storage facilities, and new and more efficient means of transportation.

Another aspect of scientific agriculture is the development of new crops. There is need for improved varieties of well-known crops; in fact, one phase of the new-crop program which is taking on rapidly in São Paulo State is the use of hybrid corn, developed by a subsidiary of the Basic Economy Corporation. To improve the quality of animals the increased use of feed crops such as oats is urged. Meanwhile a new food crop has made its appearance and is enthusiastically described. This is adlay (*coix lacrima jobis*), a tropical cereal first developed in the Philippines and India. It is said to produce more food per acre than does paddy rice. It grows on poor soil, requires little labor, yields for several years from one planting, and provides a protein-rich grain. If the city people in Brazil could be led to adopt this new cereal and thus offer a market for it, a step toward the improvement of the diet and a decrease of the cost of living would have been made.

Scientific agriculture, which is justified economically because it offers the only hope of producing more food at less cost per unit, will have important social consequences. The small independent farmer, the pioneer who clears a small tract of forest for himself and family, would seem to be outdated. He is a high-cost producer if costs are counted. To be sure it may seem desirable to some people to establish colonies in remote places on a self-sufficient basis. But the establishment of a self-sufficient peasantry would not solve the problem of providing a better living for the urban-industrial people of the capitalist world. There may be some argument about the optimum size of a farm unit: perhaps 800 acres as Sr. Aranha says; perhaps in some kinds of places a larger unit would be more efficient.

In any case if a fazenda operated on traditional lines is changed to one practicing scientific agriculture, the number of farmers needed on the land is cut, perhaps as much as two thirds.

Co-operative communities might be suggested; and the development of co-operatives is planned for certain new immigrant colonies from the Netherlands. But to get the small tenant farmer of rural Brazil to join a co-operative would be next to impossible. He has learned through bitter experience in a quick-profit economy to trust no one.

The former governor of Goiás, Sr. Coimbra Bueno, believes that improved agricultural practices would result from placing skilled immigrant colonies and modern agricultural stations in the midst of traditional tenant farms. The governor believes that the native Brazilian would learn by example. Such has been the case in Minas Gerais, where important improvements in farming have spread around the two great agricultural colleges at Lavras and Viçosa. Yet experience in the South of Brazil, as reported by Leo Waibel, indicates that the opposite change might be expected: that the immigrant farmers would be forced to descend to the less efficient system. There is no evidence as yet to suggest that the efforts of Sr. Olivo Gomes and Sr. Manoel Aranha may soon be copied by their neighbors. Certainly to change the basic attitude toward quick returns on invested capital which is the Brazilian tradition supported by more than four centuries of experience will not be easy. It offers an educational challenge of a major kind.

It is being met, or at least faced, in several contrasted ways. The Brazilian agricultural scientists, teaching and demonstrating in Brazil's excellent agricultural schools, are having a slow but important effect. Nelson Rockefeller has turned his understanding of Latin-American problems to practical ends in two organizations previously mentioned. In which way, or in how many ways, can the problem be attacked?

Changes in the Pattern of Agriculture

If and when scientific agriculture comes to Brazil, what results will this transformation have on the distribution of Brazilian population and settlement, on the *marcha para oeste*? There are perhaps two forecasts which a geographer can offer at this point.

The result will be a change in the significance of slope. At present, land in Brazil is considered too steep for agriculture only when its slope is greater than 35°. This limit still permits a vast amount of soil erosion; so much that it is probable such steep-land farming would not be permanently workable. But if machinery were introduced, the whole picture would change. Tractors on *massapê* can be used only up to slopes of 6°; possibly they could be used up to 8° on sandy or gravelly soils. If only such lands are to be considered arable, the application of machinery would result in an enormous reduction of the potential agricultural area of Brazil.

The second forecast concerns the change in the significance of location which would accompany the adoption of scientific agriculture. We can agree that modern methods could be applied to most of the soils of the country. It is entirely possible that even the sterile *cangá* lands of the *Planalto Central* could be transformed. But if such agriculture is to be made profitable by lowering the price of agricultural products in the big urban markets, it must be developed first in places easily and cheaply accessible to these markets. This means that scientific agriculture should first appear near Rio de Janeiro and São Paulo, in the Baixada Fluminense, in the Paraíba Valley, in the old coffee lands around Campinas and Sorocaba in São Paulo; and the fazendas where these methods will be most successful will be those located close to a first-class road or a first-class railroad. To expect economically workable results from the application of scientific agriculture to the remote *campo cerrado* of the interior before the lands much closer to the centers of population have been fully transformed is, in our opinion, to be quite unrealistic about the meaning of location.

So it would seem that the attempts to promote a *marcha para oeste* at this time may be seriously misguided. There is considerable danger in drawing too close a parallel in Brazil to the "westward movement" in the United States which, after 1865, opened up the prairie grasslands on rich black soils. The economic conditions of that period no longer exist; nor is the geography of Brazil at all similar to that of the Middle West of North America. Brazil would be better served by finding Brazilian solutions based on the analysis of its own particular problems and an evaluation of its own combination of resources. It would take police authority seriously to check the present current of migration moving toward the cities from thinly peopled backlands. The transformation of Brazilian agriculture would strengthen that movement, not weaken it.

Long-term Trends in Output in India

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NATIONAL INCOME ESTIMATES

DURING THE decades in which the Industrial Revolution was taking place in Britain, the military forces of the East India Company were conquering India. By the time the foundations of the modern industrial system had been firmly laid at home, say by 1820, British armies had consolidated their control of most of India. For a century and a quarter thereafter, from the 1820's to the Indian Independence Act of 1947, India did not shape her own economic destiny. Rather, that destiny was shaped for her by her British rulers. This is the cardinal fact in India's economic evolution since the early years of the nineteenth century. It should not be surprising, therefore, that much of India's economic literature has been primarily concerned with the economic relationship between Britain and India, rather than with the development of economic institutions in India, per se. In view of the crucial importance of that relationship we may begin by stating three principal ways in which outstanding writers have characterized it.

Unrestrained Exploitation

Great Britain, we are told by writers of this school, became wealthy by exploiting her possessions, particularly India. She rackrented India and "drained" funds out of the country without giving any equivalent in goods or services for them. As a result India was poorer in 1900 than in 1850, and per-capita levels of living declined throughout the second half of the nineteenth century. William Digby, a former British civil servant in India, provided the fullest and most vehement statement of this position in his large work, characteristically entitled, "*Prosperous*" *British India: A Revelation from Official Records* (London, 1901).¹

¹ A less extreme statement of this position is available in Romesh Chunder Dutt: *Economic History of India in the Victorian Age* (London, 1906).

Britain the Modernizer and Benefactor of India

Most British officials who had served in India, and British writers in general, took a position directly opposed to that of Digby. They held that the Indian people were rackrented and impoverished *prior* to the British conquest; that Britain brought law, order, and the security in which wealth could be accumulated; that British public-health measures, steam railways, and irrigation systems had encouraged agricultural production, given the impetus to factory industry, and started India on the road to modernization. Dr. L. C. A. Knowles of the London School of Economics furnished the most forthright statement of this position in a study entitled *Economic Development of the British Overseas Empire*, Vol. I (London, 1924).²

India as a Dependent: Colonial Economy, Polity, and Society

Between the two extremes represented by Digby and Knowles lie many intermediate positions. Among these we call attention, for brevity's sake, to only a few basic contentions. A number of writers have contrasted what Britain *did* in India with what Britain did *not* do. They point out that Britain acted vigorously to turn India into a very junior economic partner of Britain. The new railways, ports, and irrigation helped India to become a great supplier of raw materials to Britain and one of Britain's best markets for finished goods. By contrast, so far as concerns the growth of modern industry within India, or the systematic modernization of the country, Britain either acted haltingly, or acted positively to retard development. Thus India's development was lopsided, unbalanced. Where modernization served Britain's own interests, there it was facilitated; where it did not, India's economy remained archaic. In the process India became a "colonial" economy, dependent on Britain.³

In the works of some writers this *economic* characterization has gone hand in hand with a similar analysis of British *political* and *social* policy in India. Thus Britain, it is stated, brought law and order and the "Anglo-American tradition" of justice to India—but not to all of India: 40 per cent of the country was left to the arbitrary, personal rule of India's protected princes. This was a political decision adopted after the Rebellion of 1857/58. British policy makers felt their empire would be stronger and last longer if they "created across the length and breadth of India a chain of principalities, nominally independent but in reality subject to them."⁴ Similarly, in the social sphere, Britain introduced quite a number

² It is only fair to state that some followers of Dr. Knowles, such as Dr. Vera Anstey (author of the *Economic Development of India*, London, 1929, and of other works to be cited later), have taken a less unqualified position than that of Dr. Knowles.

³ See the concluding chapter (xiv) in the first edition of D. R. Gadgil's *Industrial Evolution of India* (Bombay, 1924). For a recent restatement, see the opening sections of N. V. Sovani, *Transition from a Colonial to a National Economy* (New Delhi, 1947).

⁴ K. S. Shelvankar, *Problem of India* (London, 1940), p. 25.

of modern institutions; public health and sanitation measures, new legal codes, universities, modern journalism. Simultaneously, Britain announced in 1858 that thenceforth it would leave untouched the vast and undefined sphere of "religion," lest action in this sphere serve as a spark for another rebellion. The dual or split character of British political and social policy served only to accentuate the unevenness and lopsidedness of its economic and political impact on India. Kingsley Davis sums this up by terming it a "differential diffusion" of modernization, a process which he considers of crucial importance for the demographic problems of modern India.⁵

For three quarters of a century then, controversy has flourished about the economic relations of Britain and India. Since early in the game supporters of all viewpoints have employed statistics to give their arguments the solidity of a quantitative basis, or at least the appearance of the same. Chief among the statistical weapons hurled about have been figures of average per-capita income. Thus William Digby, in a master stroke of statistical polemic, had printed in gold on the spine of his *magnum opus* the following table of average, per-capita daily income in the provinces of British India:

1850—2 d.
1880—1½ d.
1900—¾ d. ⁶

Digby's startling results did not represent the first effort to estimate national income. To Dadabhai Naoroji, one of the outstanding Indian public figures throughout the half-century before World War I,⁷ belongs the credit for initiating work in this field. Naoroji's methods were spartan in their simplicity. He confined himself in time to a single year, 1867-68; in area, to most, but not all, of the provinces of British India, that is, to the parts of India for which at least a modicum of organized data existed. Since the Indian economy was primarily agricultural, Naoroji began by making a rough calculation of the net income from land under crops. In view of the limited supply of agricultural statistics he worked only with the data on the one or two principal crops for each province. For those one or two crops in a given province he framed a figure of average value of net income per acre. Then he multiplied by that figure the total acreage of *all* crops under cultivation in that province. The provincial figures were then added together to yield an estimate of net value of agricultural pro-

⁵ See Davis's paper submitted to this conference; also his *Population of India and Pakistan* (Princeton, 1951), and his chapter in the symposium edited by Frank W. Notestein, *Demographic Studies of Selected Areas of Rapid Growth* (New York, Milbank Memorial Fund, 1951), especially pp. 44 ff.

⁶ From "*Prosperous*" *British India* (London, 1901). The term "British India" did not include the areas of the Indian Princes, but referred only to the provinces directly under British administration.

⁷ Cf. R. P. Masani, *Dadabhai Naoroji: Grand Old Man of India* (London, 1939).

duce, which worked out at 2.6 billion rupees. To this he added an arbitrary figure for the value of meat, milk, fish, and the like: 0.15 billion rupees.

Naoroji used the following procedure to arrive at the figure 0.15 billion rupees as the value of all industrial output: he estimated gross output of industry in the province known as the Punjab at 0.04 billion rupees. He subtracted one-half of this figure as an allowance for value of raw materials consumed, and thus arrived at a net value of industrial output in the Punjab of 0.02 billion rupees. Since the population of the Punjab was then about one-tenth of British India as a whole, Naoroji considered multiplying the Punjab figure by ten to obtain a figure of 0.2 billion rupees for British India. But he decided that manufactures in other parts of India were not so valuable as those of the Punjab, and therefore put down a final figure of 0.15 billion rupees. In assigning mines and commerce a slightly higher value of 0.17 billion rupees, Naoroji presumably had data from government sources on physical output and value of minerals produced; while income from commerce appears to have been calculated by taking a rough percentage of the estimated value of total transactions. Thereby he obtained a total of 3.07 billion rupees, as the income from agriculture, industry, and commerce. Naoroji explicitly refused to assign any value to "services," since these in his view did not reflect genuine income. He did, however, put down a figure for "contingencies," namely, 0.33 billion rupees (larger than the combined value of income from industry, mines, and commerce). Thereby he obtained a grand total of 3.40 billion rupees, which, divided by the estimated 170 million population in the area of his coverage, worked out to an annual per-capita income of 20 rupees.

One may well ask, why pay attention in the 1950's to a figure put together in such fashion? The answer is that it is a hardy perennial, one of the most commonly cited statistical items in the economic literature pertaining to India.⁸ Nor are the succeeding estimates made before 1914 much better. The government of India issued an estimate in 1882 which had been prepared by Major Evelyn Baring (later Lord Cromer of Egypt fame) and David Barbour. They calculated that the agricultural income of British India in 1882 was 3.5 billion rupees. The government of India apparently never revealed the methods used to reach this sum. Presumably Baring and Barbour utilized, among other materials, the data on field crops collected for (1) the extensive Famine Inquiry Commission of 1880, and (2) the comprehensive *Gazetteer of India*, issued at this time under the editorship of the historian and statistician, William Wilson Hunter.

⁸ As late as 1951 Naoroji's 20-rupee figure for 1867/68 headed the table of per-capita income estimates given in Kingsley Davis' *Population of India and Pakistan* (Princeton, 1951), p. 206; on the basis of Naoroji's estimate and a number of others, Davis argues that during the last eight decades the average level of living has been rising slowly in India.

Baring and Barbour put all nonagricultural income at exactly one-half of agricultural income, i.e., 1.75 billion rupees, yielding a total of 5.25 billion rupees.⁹ Taking the population of British India in 1882 as just under 195 million, the average per-capita income for 1882 would have been 27 rupees.¹⁰

The same procedure as that of Baring and Barbour was followed in 1901 by Lord Curzon, Governor-General and Viceroy of India. By Curzon's time systematic collection of agricultural statistics was under way in British India; employing this steadily increasing body of data, Curzon arrived at a valuation of agricultural production in British India during the year 1897/98 of 4.5 billion rupees. Then, following the Baring-Barbour procedure, he set nonagricultural income at one-half of this, 2.25 billion rupees. The grand total thus obtained was 6.75 billion rupees, which, when divided by the estimated 225 million population of British India in 1897/98, worked out to an average per-capita annual income of 30 rupees.¹¹

Curzon was pleased to believe that this 30-rupee figure, compared with the 27-rupee estimate of Baring-Barbour (let alone the 20-rupee figure of Naoroji), indicated a *rising* trend in the level of living in India. But the great famines of 1899/1900 led William Digby to charge Britain with "the great, the dismal, the awful retrogression, not only in material prosperity but also in other important respects [of India]. . . ."¹²

Digby asserted that in 1899 the average per-capita income in British India was 18 rupees, a sum not only 43 per cent less than Curzon's estimate for 1898/99, but even lower than Naoroji's figure for 1867/68. The reason for this lower estimate is that Digby used different methods to calculate both agricultural and nonagricultural income.

On the agricultural side Digby cavalierly dismissed the official statistics on area under cultivation, yield per acre, and prices, which formed the basis for a money valuation of crops. He felt that the government of India had no real interest in obtaining accurate data on these subjects, lest knowledge of the pitiful condition of the peasantry interfere with the government's collection of its basic source of income, the revenues obtained from the land.¹³ Digby felt compelled, therefore, to adopt "another

⁹ According to G. Findlay Shirras, the basis for the 2:1 ratio of agricultural to nonagricultural income was the fact that the ratio of those engaged in agriculture to those engaged in nonagricultural pursuits was roughly 2:1. See Shirras, *Science of Public Finance* (3rd ed.; London, 1936), I, 245.

¹⁰ Cited in Digby, *"Prosperous" British India*, pp. 364, 442-443.

¹¹ *Ibid.*, pp. 370-373.

¹² *Ibid.*, Preface, p. 3. Digby's book, in fact, was dedicated, "without permission," to Lord George Hamilton, then Secretary of State for India, to Lord Curzon, and to others, "with the hope that the facts herein recorded may lead to the amelioration of the condition of many millions of British subjects who, on every New Year's Day, enter upon a period which is certain, for their country as a whole, to be worse than the years already past."

¹³ *Ibid.*, pp. 381, 443.

mode" of calculation. "The Government revenue [from the land]," he wrote, "is assumed to bear a definite ratio to the assumed (or ascertained) produce of the soil reckoned over a number of years." That ratio varied from one province of India to another. "It is approximately ascertainable," he continued, "and I have ascertained it as nearly as may be. Possessing it, to arrive at the money value, I have multiplied the land revenue the necessary number of times, and have thus reached the result I announce."¹⁴ By this method Digby arrived at a money value of the *agricultural* production of British India in 1899 of 2.6 billion rupees, which is the lowest of all estimates we have listed so far.¹⁵

Although critical of his predecessors' *methods* of calculating non-agricultural income, Digby's general *results* were not significantly different. Whereas he estimated agricultural income at 2.6 billion rupees in 1899, he put down for nonagricultural income in the same year the sum of 1.46 billion rupees, which was only 11 per cent higher than would have been yielded by a 2:1 ratio of agricultural to nonagricultural income. Digby was concerned only with material goods as a source of income, so he excluded the services from his calculations. When his estimate of total income is divided by the estimated population for British India in 1899, the outcome is an average per-capita income of 18 rupees.¹⁶

Digby's book constituted one of the strongest denunciations of Britain's Indian Empire ever put in print. Nationalist writers of all schools in India during the fifty years since its appearance have drawn on it repeatedly and heavily. It had to be answered. The reply came promptly, in the form of a paper sent to the Royal Statistical Society in London by Fred J. Atkinson, an experienced British official serving in the Accounts Department of the Government of India. Atkinson was no amateur in the field of statistics. He had been honored by the Royal Statistical Society in 1897 with its Guy Medal in silver, the same award that had been made to A. L. Bowley in 1895 and to Sauerbeck in 1894.¹⁷

Atkinson began by stating that he was going to avoid the base years used by Curzon and Digby: 1880 and 1897/99. These were too close to the famines of the late seventies and the late nineties. Instead Atkinson endeavored to compare 1875 and 1895, years "which were free from unusual and extraneous influences."¹⁸ He estimated total income for the year 1875 in British India to have been 5.74 billion rupees; dividing

¹⁴ *Ibid.*, pp. 531-532.

¹⁵ *Ibid.*, pp. 611-614. Digby's method assumed, among many other things, that land revenue was accurately assessed, whereas the contrary undoubtedly was the case.

¹⁶ Digby attempted to separate out the share of the one million or so most prosperous Indians from the share of the rest of the population; but he brought so little data to bear on this subject that we shall not pause to consider it. Further, his data on nonagricultural income were so scanty that no effort need be made to discuss them either.

¹⁷ *Journal of the Royal Statistical Society*, LXV (1902), Appendix, viii.

¹⁸ Fred J. Atkinson, "A Statistical Review of the Income and Wealth of British India," *Journal of the Royal Statistical Society*, LXV (1902), pp. 209 ff.

this by an estimated 188 million population gave an average per-capita income of 30.5 rupees. By contrast, total income in 1895 worked out to 8.77 billion rupees, which, divided by the estimated 222 million population for that year, gave an average per-capita income of 39.5 rupees. Thus, in contrast to the deep gloom of Digby, Atkinson emerged with a 31-per-cent increase in the per-capita figure of 1895 over 1875. How did he do it?

The biggest segment of the increase in income was that of agriculture (1.88 billion rupees in the 20 years). Atkinson conceded the incomplete and far from trustworthy character of the agricultural data for the 1870's. He nevertheless utilized these data to conclude that: (1) area under crops increased 33.5 million acres; (2) the average yield per acre of all crops (food and nonfood, irrigated and nonirrigated, etc.) increased 4 per cent, that is, from 724 lbs. to 753 lbs.; and (3) prices of agricultural products rose 31 per cent, and money income rose accordingly. In his calculations he made no deductions for seed, wastage, and depreciation.¹⁹ Later critics, such as V. K. R. V. Rao, have suggested that his estimate of an increase of 1.88 billion rupees in agricultural income during these two decades be cut in half.²⁰

Atkinson's procedures in handling nonagricultural income were equally arbitrary, both in small matters and in large. He included in the income of British India the salaries paid to British civil servants, British army officers, and soldiers. He appears to have counted twice the income gained from the commerce in agricultural products. He treated almost a million mendicants as gainfully employed. He further inflated his estimate by making no allowance for depreciation anywhere in the nonagricultural sector. Most important of all was his method of estimating the incomes of those listed (in the decennial census) as engaged in nonagricultural occupations: "every adult male of 15 and above has been treated as *continuously* employed and receiving the estimated (average) wage throughout the year."²¹ Atkinson conceded that this was a bold assumption. He knew that there were "a large number of women and children" gainfully employed: children's nannies, sweepers, bakers and sweetmeat-makers, factory operatives, village handicraftsmen, midwives, dancers, and prostitutes. He also knew that fifteen was no magic age upon the attainment of which all boys got jobs at men's wages; that many men were without jobs, or sick, or too old to work. Yet, "after taking these facts into consideration it seems probable that a reduction of 5 per cent from the adult males would be a sufficient allowance for non-employment . . ."; while presumably the women and children employed would offset the men underemployed or paid less than the estimated average rates.²²

¹⁹ *Ibid.*, pp. 210-219, 260-264.

²⁰ V. K. R. V. Rao, *An Essay on India's National Income, 1825-1920* (London, 1939), pp. 28-36.

²¹ Atkinson, *op. cit.*, p. 230 (my italics—D.T.).

²² *Ibid.*, pp. 230-231.

The net effect of Atkinson's procedures was to inflate the total income and therefore the per-capita income for both 1875 and 1895. At the same time, he failed to provide data to substantiate his arguments; nor did he spell out his method of framing estimates so that some idea of possible range of error could be formed. In short, although his calculations are presented much more neatly than Digby's, they might well have constituted as crude an overestimate, particularly for 1895, as Digby's did an underestimate for 1899.

Atkinson's estimates were the last important ones made before 1914. India's national income became a hot political question in the aftermath of the first great Civil Disobedience campaign under Gandhi in 1920-22. Since the middle of the 1920's a number of attempts have been made to calculate India's national income. Despite the political touchiness of the subject, the outstanding of these attempts have been more careful and more scientific than their pre-World War I predecessors, and have been composed with considerable knowledge of the progress of national income research in Europe and America. The first of these efforts was the study by K. T. Shah and K. J. Khambata, *Wealth and Taxable Capacity of India*. They obtained an average per-capita income figure of 74 rupees for 1921/22, based on a total income of 23.64 billion rupees and a population of 319 millions. Several features of this work are distinctive. It dealt with the whole of India, both British India and the territories of the princes. It covered a time span of more than two decades, 1900 to 1921/22 inclusive. It was explicitly confined to material production, material commodities; the services were excluded on principle—lawyers and merchants being dismissed by Professor Shah as parasites. "All services," wrote Professor Shah, "have to be and are rewarded ultimately from the same dividend (yearly total) of material commodities produced in the nation. . . . When we have measured the material commodities, we must necessarily be taken to have included also the services—not only those which are actually, obviously, directly, involved in the production of those commodities, but also those which are ancillary or incidental to that production [such as the government official or the soldier]."²³

For such an approach the 1920's offered advantages which were not present in the pre-World War I period. Thus in the agricultural sector, constituting the overwhelming bulk of the economy, there became available in the postwar period better statistics, more statistics (i.e., for more crops), and statistics for hitherto nonreporting areas, such as Hyderabad, one of the largest, most populous, and most important of the princely territories. Shah and Khambata began by putting together in systematic form the scattered, uneven, and, at times, misleading data on India's total agricul-

²³ K. T. Shah and K. J. Khambata, *Wealth and Taxable Capacity of India* (Bombay, 1924), Professor Shah's Preface, p. vii. Professor Shah explains in this Preface that Khambata did the actual computation of the national income *estimates*, but is not associated with Shah's own interpretations and judgments based on them.

tural output for 1900-1921/22. Their efforts in this direction constituted the most valuable part of their work. An outcome of their labor was a figure of value of agricultural output for the year 1921/22 of 21 billion rupees (in current wholesale prices, after 5 per cent had been deducted for seeds).²⁴

As soon as Shah and Khambata moved away from field crops, they found the going much rougher. Thus, working with very scanty data, they concluded that India had no net income from its cattle. Their argument was that the value of hides and skins, bones, manure, meat, milk, and accretions to livestock, on the one hand, was offset, on the other, by cost of upkeep and by depreciation. They conceded that livestock contributed animal power for working the fields and for hauling, but considered the value of these services as included under other heads. Income from forests and fisheries they put down at 0.31 billion rupees (in prices of 1921-22).²⁵

The work of Shah and Khambata has been most sharply challenged in the nonagricultural sector. Their estimate of the nonagricultural income amounted only to 2.35 billion rupees, compared with 21 billion rupees for agricultural income; thus their ratio of agricultural to nonagricultural income was roughly 9:1. This was a striking disproportion since, as the book itself states, the percentage of those gainfully employed in agriculture was roughly 70, as contrasted to 30 per cent gainfully employed in the nonagricultural sectors.

This disproportion, however, was an inevitable consequence of Shah and Khambata's approach to national income. They contended that "the wholesale prices that we have taken really include a portion of the profits of middlemen and transport agencies. . . ." They saw no practicable way of estimating the remainder of the value added by these groups—which, in any event, they felt to be small—so they passed them by. For *retail* traders they set down an arbitrary figure of 0.26 billion rupees. Whereas commerce and transport dealt with the handling of material commodities, the same could not be said for government and for the professions; these, therefore, simply were not counted. Similarly, they rejected as "immaterial" the concept of "income" from rent of houses; but they did allow 0.2 billion rupees for the net cost of new houses erected in 1921/22 (this sum being taken to be the profits of building contractors and the wages of all others in the building trades).²⁶

The last three categories with which Shah and Khambata dealt were minerals, manufactures and power, and handicraft products. Minerals

²⁴ *Ibid.*, p. 163. They claimed, perhaps sanguinely, that their estimate of physical output for any single year might "be taken to be correct within a margin of error of 5 per cent" (*ibid.*, 88 n.).

²⁵ *Ibid.*, pp. 145-147, 200. For criticism of their calculations of net income from cattle, especially milk, see V.K.R.V. Rao, *An Essay on India's National Income, 1925-1929*, pp. 41-42.

²⁶ *Ibid.*, pp. 172, 191.

were relatively easy to calculate from the reports of the Geological Survey of India and of the Inspector of Mines: they put down under this heading for 1921/22 a sum of 0.28 billion rupees. New data were also available for power and for factory-produced manufactures. Since 1915 the government of India had been issuing a new statistical series of *Large Industrial Establishments in India* (and also in the states of some of the princes). On the basis of data from this and other sources, Shah and Khambata put down a figure for manufacturing industry of 1.46 billion rupees. The final item left to be dealt with was handicrafts and cottage industries. Here Shah and Khambata first put down 0.25 billion rupees for net income from handloom weaving, following the figures of the *Report of the Indian Industrial Commission of 1916-18*; while for all other income from handicrafts, cottage, and domestic industry they put down a mere 0.15 billion rupees.²⁷

Their procedure in dealing with handicrafts underlines one of the central weaknesses of Shah and Khambata's study: their failure to check their results by utilizing alternative methods or by analyzing their data in the light of other data with which it should fit. Thus on the face of it, the ratio of agricultural to nonagricultural income is too high. Partly this was due to the fact that the income from handicrafts was set so low. There was one relatively easy method which Shah and Khambata could have used as a rough check on the handicraft figure: the year 1921-22 was a census year, and the census collected data on urban and rural occupational groupings. While the reliability of some of these occupational data is open to serious question, the data available in the census are better than no data. By taking the total number of handicraftsmen in 1921 and dividing by it their own figure for income from handicrafts, Shah and Khambata might have seen that their guess did not make sense.

V. K. R. V. Rao is the author of the next study which we have to consider: *National Income of British India, 1931-1932* (London, 1940). He also published an earlier book entitled: *An Essay on India's National Income, 1925-1929* (London, 1939). Interestingly enough, Rao was invited to undertake this work by the trustees of the memorial fund set up in honor of Dadabhai Naoroji, whom we have previously mentioned as the compiler of India's first national-income estimate. Both of Rao's studies dealt only with British India (i.e., excluding the territories of the princes, for which much less data was available). Whereas the first treated a quinquennium in the 1920's, the second was based on a census year. Aside from noting that Rao's *Essay* contains some useful discussion of previous work in the field, we shall pass on to his second study, which treated a wider range of data and superseded the original attempt.

In his major national-income study Rao used more sophisticated methods than any of his predecessors. He indicated the margin of error he believed to be involved both in his over-all estimates, and in his estimates of

²⁷ *Ibid.*, pp. 180, 186, 187-189.

the various components of national income. According to Rao's calculations the national income of British India in 1931/32 lay between 16 and 18 billion rupees (in current prices of that depressed year). Alternatively stated, the national income was 17 billion rupees with a margin of error of plus or minus 6 per cent. Divided by the population of British India in that year, 271.5 million, this worked out to a per-capita average of 62 rupees, plus or minus 6 per cent.

Rao's investigations indicated that there were in India in 1931/32 something like 91.3 million actual earners. Of their 17 billion rupees of total income, about 9 billion (or 53 per cent) came from agriculture, livestock, and related pursuits; about 3 billion rupees (or roughly 20 per cent) came from industry, including handicrafts and modern-style factories; all the rest (trade, communications, government, the professions, and domestic service) accounted for the remaining 25 per cent.

In making his estimates Rao used both the "inventory" (or value of net product) method and the "income" method. The former he employed for the agricultural sector; that is, he calculated the value of total output, subtracted certain costs of production, and reached a figure of net value of output—9 billion rupees. For the remaining sectors of the economy he proceeded by the "income" method, that is, his chief problem was to calculate "average earnings by workers in each major occupational group."²⁸ In addition, of course, he had to ascertain how many (nonagricultural) individuals were wealthy enough simply to live off their income without being gainfully employed. The total number of principal earners with whom Rao dealt by the "income" method was roughly 26 million. In treating this group, Rao took considerable pains to avoid double counting (i.e., to avoid counting in the "income" category value of goods already included in the 9 billion rupees ascribed to agricultural output). His conclusion was that these 26 million earners received in 1931/32 about 8 billion rupees of income.

The largest single item in Rao's calculations is the value of all field crops, which he gives as 6 billion rupees in 1931/32 prices. In the body of his text Rao sets this figure down as subject to *no* margin of error. This might be unobjectionable if there existed a superb mechanism for the collection and refinement of Indian agricultural statistics. Such, however, has not been the case. The official figures have been subject to criticism in respect to three principal features: the area each year under crops, the quantity of output, and the money value of that output. In his concluding chapter, in fact, Rao intimates that he may have underestimated agricultural output by 10 per cent.²⁹

Second only in importance to the value of field crops was the figure for the value of livestock products (milk and milk products, meat, hides and skins, and the like). Rao set this figure at 2.7 billion rupees, that is, 16

²⁸ Rao, *National Income of British India, 1931-1932* (London, 1940), p. 122.

²⁹ *Ibid.*, p. 185.

per cent of the total national income of 17 billion rupees. Milk and its derivatives account for nearly 90 per cent of the value of all livestock products, 2.4 out of 2.7 billion rupees. Rao has described vividly the problem he faced in making his estimate of milk from cows and buffaloes available for human consumption:

It appears that according to nonofficial estimates, the milk yield per cow varies between 100 and 1000 lbs. [a year], and that for the buffalo from 400 to 2500 lbs.

It is easy to see how difficult it is to compile any estimates of average yield; and much will depend upon the investigator's judgment. With a courage possibly worthy of a better cause, the writer proceeded to assume that on the whole, and perhaps erring on the optimistic side, the average yield of milk per cow may be placed at 500 to 750 lbs. a year, and that per buffalo at 1500 to 2000 lbs.³⁰

The largest item which Rao included in his computation of nonagricultural income was "incomes assessed to income-tax." According to official data these amounted in 1931/32 to 2.16 billion rupees, or more than 25 per cent of Rao's 8 billion total for nonagricultural income. In the body of his text Rao indicates no margin of error for this figure of 2.16 billion. In his conclusion Rao raises the possibility of the evasion of income taxes. Perhaps, he suggests, "the consequent underestimation of incomes assessed to income-tax was not less than 5 per cent. . . ."³¹ To limit underpayment of income taxes (and the consequent underestimation of incomes) to the very modest dimensions proposed by Rao seems unrealistic.³²

Leaving aside the small minority of workers who paid income tax, Rao included 14.2 million principal earners in the category of workers occupied in industry. He estimated that these workers, together with their dependents, earned 2.1 billion rupees plus or minus 18 per cent. Rao was able to rely on governmental publications for the figure of 1.4 million workers employed in large industrial establishments, and he could make a fair guess as to their earnings, although no census of industrial wages was available to him. In regard to all other types of urban and rural workers (unskilled workers, independent artisans, and other skilled workers) the task was much more difficult. The occupational statistics of the 1931 census did not distinguish these groups clearly from each other, so that it was not possible to be confident just how many to assign to each category. The income levels in each case had to be pieced together from tiny scraps of relevant data. In view of the vast mass of individuals and the many different occupations involved, Rao's estimates are understandably rough.

³⁰ *Ibid.*, p. 91.

³¹ *Ibid.*, p. 185.

³² Cf. Government of India, *Report of the Income-Tax Investigation Committee* (New Delhi, 1949).

The specific margins of error which Rao assigned to each of his estimates vary from zero (as for the value of field crops) to 25 per cent (for the income of 6.3 million rural skilled workers, i.e., village craftsmen). The arguments in support of his narrow margins of error are not always convincing. In the cases where he has indicated a fairly wide margin, the extremely refractory nature of the basic data suggests that there may have been an even greater range of error. Unquestionably Rao's margin-of-error figures, as well as the estimates which they modify, were prepared with much thought. But we may well question whether his various estimates actually fall within the margins of error imputed to them. In particular, the figure of plus or minus 6 per cent for the margin of error of the over-all estimate would appear to imply a greater precision than the nature of the data would warrant.

R. C. Desai's study entitled "Consumer Expenditure in India, 1931-32 to 1940-41"³³ is somewhat different in focus from the national income estimates which we have been considering. In this work Desai attempted to account for all expenditure by families and individuals on current goods and services for each year of the 1930's. Desai did not treat, therefore, net capital formation, public and private, or government services to ultimate consumers. If suitable approximations could be made for these items, however, they could be added to the estimates of consumer expenditure to produce national-income figures for the years under consideration. Desai, in fact, had this in mind as his ultimate aim. His study is important to us even in its present form because consumer expenditure reflects the overwhelming bulk of Indian national income.

Desai's final results were strikingly different from the last set we considered, that of V.K.R.V. Rao. Among the reasons why this difference is worth exploring is the fact that both Desai and Rao treat in detail the same year, 1931/32: this was the year upon which Rao's major study was focused, while for Desai it constituted the initial year of the decade which he investigated. Whereas Rao emerged with an average per-capita income figure of about 62 rupees, Desai held that in the same year per-capita consumer expenditure alone amounted to about 82.5 rupees. Nor is this the only important difference between Rao and Desai. Rao concluded that national income per capita was slowly rising in India, whereas Desai asserted, "it is quite probable that national income per capita has not been rising. . . ."³⁴

It is necessary to bear in mind that Rao dealt only with British India (which then included Burma), whereas Desai covered both British India (*excluding* Burma) and the Indian States. Rao's figure of total income for British India in 1931/32 was about 17 billion rupees (for a population of some 271.5 million). Desai arrived at a figure of total consumer

³³ *Journal of the Royal Statistical Society*, CXI, Part IV (1948), 261-307.

³⁴ *Ibid.*, p. 282; Rao, *National Income*, p. viii; and Rao, *An Essay on India's National Income, 1925-1929*, pp. 154-163.

expenditure for all of India in 1931/32 of 28.1 billion rupees (for a population of 340.5 million). In detail, Desai's figure of 28.1 billion rupees was made up as follows: all foodstuffs, 18.8 billion rupees; housing, household goods, fuel, light, and power, 2.6 billion rupees; textiles for clothing and furnishings, 2.0 billion rupees; tobacco, alcoholic drinks, and drugs, 1.4 billion rupees; services, 2.1 billion rupees; while the remaining 2 billion rupees covered such items as transport, reading matter, amusements, and a wide variety of "personal effects."

Both Rao and Desai, in the last analysis, had to resort to similar procedures, even though one was primarily concerned with income received and the other with consumer expenditure. In point of fact both Rao and Desai fell back primarily upon the output method. As one commentator on Desai's paper has put it, "Mr. Desai's estimates are really estimates of output, rearranged so as to add up to estimates of consumer expenditure."³⁵

The disparity between Rao's and Desai's over-all estimates arises from their sharply different treatment of a number of specific items, as for example, fruits and vegetables. Rao assigned a very minor value to these products, 0.7 billion rupees.³⁶ Desai arrived at a valuation of 4.8 billion rupees. Both authors made use of the returns for acreage under these crops—roughly 5 million acres altogether. Rao assumed on the basis of information from village surveys that value of crops from acreage under fruits and vegetables was about six times that of acreage under cereal crops. Desai, in addition to the acreage figures, had access to more recent governmental reports on the marketing of potatoes, citrus fruits, bananas, grapes, and cashew nuts, and some Bombay data on the prices of onions. He was able to use this material as a guide in estimating the value of other fruits and vegetables. His total for this category, 4.8 billion rupees, is not only surprisingly large as compared to Rao's figure, but also comes close to equalling the 5.1 billion rupees which he indicated as the value of all cereal crops (rice, wheat, millets, and the like). In terms of our knowledge of the Indian diet, this relationship appears very dubious. It is also difficult to believe that the value per acre of the area under fruits and vegetables is more than 35 times as great as that of the area under foodgrains.

Similarly, Rao estimated the total value of the tobacco crop at 0.14 billion rupees (excluding Burma). Desai's figure for the value of processed tobacco (cigarettes, cigars, cheroots, and other finished products) is 1.13 billion. This discrepancy would seem to be much greater than the costs of processing would justify. Which of the two estimates is the more to be relied upon is problematical.

Like Rao, Desai was concerned with the question of the reliability of his estimates. His paper includes an interesting discussion of methods of assessing and indicating margins of error. He also takes up the problem

³⁵ E. F. Jackson, *Journal of the Royal Statistical Society*, CXI (1948), 299.

³⁶ Rao: computed for British India (excluding Burma), according to the method described in his text from data given in his Table 17, *op. cit.*, p. 73.

of pricing (i.e., imputing value to) goods which are consumed by their producers without passing through any market. These include peasants' retention of their own products and payments in kind to agricultural workers.³⁷

The most recent estimate was prepared by the National Income Unit of the Government of India and published in the *First Report of the National Income Committee*, April, 1951. As the document makes clear, this estimate is not comparable with any of its predecessors. The area with which it is concerned is neither all-India (as covered by Desai and by Shah and Khambata) nor British India (as treated by Rao); rather it is the area of the new Union or Republic of India as it has existed since the partition of the older India in August, 1947, to make possible the new separate nation of Pakistan. The period with which the *First Report* is concerned is the year 1948/49 (April 1-March 31). The treatment is frankly provisional; basic data are given in summary form; many important details are not included.

Despite these limitations the *First Report* is the most valuable document which we have so far on India's national income. Published nearly four years after India's emergence as a sovereign nation, the *First Report* is not concerned, directly or indirectly, with the argument that had underlain the older estimates, i.e., the argument about the economic relations of India and Britain. Rather, the *First Report* was designed to give the new government of India preliminary factual knowledge of India's national income, as a guide in shaping fiscal and related economic policies. The *First Report* faces more directly than any of its predecessors the range of problems involved; indicates somewhat more explicitly the variety of methods of estimation and conjecture employed; and draws on a considerably enlarged body of data. The results embodied in the *First Report* may be summarized briefly. The *Report* puts national income for 1948/49 at 87.1 billion rupees; since the population of the union of India for that year is estimated at 341 million, per-capita income works out to 255 rupees. (A rough correction for changes in price level can be made on the basis of the index number of wholesale prices in Calcutta; according to this index the price level in 1948 was 425 per cent of the price level in 1931. This difference in price level should be borne in mind by those who compare Rao's 1931/32 estimate with the National Income Committee's recent estimate.) The dominant position of agriculture emerges clearly from the data: the share of agriculture (and animal husbandry, forestry, and fishing) in national income was estimated at 41.5 billion rupees, or 47.6 per cent of the total. Mining, manufacturing, and hand-trades accounted for 17 per cent; commerce, transport, and communication for 19.5 per cent; and other services for 16 per cent.

Among the interesting features of the *First Report* is the effort to calculate provisionally the relative shares of small and large enterprise in

³⁷ Desai, *op. cit.*, pp. 268-271.

net output. The *First Report* indicates that this may well have been in the rough ratio of 5:1, that is, some 50 billion rupees of output are attributed to small enterprise (largely household enterprise), while only 10 billion rupees are attributed to larger enterprises (factories, railways, plantations, and the like). Furthermore, the *Report* essays a rough calculation of net output per occupied person in different sectors of the economy: agriculture works out at 500 rupees per head, factories and mines at 1,700 rupees, and railways and communications at 1,900 rupees.

The authors of the *First Report* repeatedly warn the reader against attaching undue precision to these estimates. Thus they state that estimates of output for many crops and many parts of India "contain an unknown element of error." (It is clear from inspection that in the handling of a number of items, such as fruits and vegetables, rough-and-ready methods of computation have been employed.) On the much-controverted subject of domestic capital formation they declare that "there are no data which would permit an estimate of capital formation except for the hope extended by further analysis of production statistics."³⁸

It may be worthwhile at this point to note what kinds of statistical data were available, as of 1951, for the analysis of India's national income, and what kinds were lacking. Following the compilers of the *First Report*, we may list five categories of basic data which were in existence. These comprised: (1) figures on the gross volume of agricultural and mineral production, together with some material on prices; (2) reports on the activities of modern industrial establishments, banks, and insurance companies; (3) income and expenditure data for the government and government enterprises; (4) limited amounts of data on occupational groupings; and, (5) data on foreign commerce and other information pertinent to balance of payments.

In comparison with these types of data which are available, the gaps in statistical knowledge are staggering. So far as concerns the basic industry of the country (agriculture and animal husbandry), we are seriously in need of data on the structure of costs, on expenditure for consumer goods, and on the extent of savings. Similarly, so far as concerns the urban population as a whole, information on consumer expenditure and savings is highly inadequate. No *comprehensive* census of manufacturing has yet been taken, nor has a census of distribution ever been attempted. Data on handicrafts, unorganized trade, and private transport are severely limited; this is also true for the professions and the liberal arts.

In conclusion we have to ask whether the available estimates of India's national income can be combined into a series from which useful conclusions can be derived. On the basis of these estimates are we able to say, for example, whether India's average per-capita income in the years since the latter part of the nineteenth century has remained the same, has risen, or has declined?

³⁸ *First Report*, Government of India, 1951, pp. 15, 19.

Before answering this question we may review briefly the comparability of the existing national income estimates. If we consider the concept of national income which the various estimators employed, we find that three estimates—those of Naoroji, of Digby, and of Shah and Khambata—were based on the exclusion of services from the definition of national income. The other six estimates included services.

Area of coverage also varied widely. Six of the nine estimates aimed to cover British India; two others (Shah and Khambata, and Desai) treated all of India; while the most recent work dealt only with the post-1947 Republic of India (i.e., excluding Pakistan).

The amount of basic data available to the earlier estimators was of course very scanty compared with that upon which the more recent analysts could draw, and it also tended to be less reliable. No single series of official figures can be cited as having figured in the computation of all nine estimates, since some of the earlier workers rejected whole categories of material as unsatisfactory. Largely because of the different types of data with which they were dealing, the older estimators employed widely differing methods, some of which constituted hardly more than guessing. The authors of the four estimates made since World War I have been much more careful in their computations, but their methods have been by no means identical.

The fact is that in these estimates dissimilar concepts and methods of computation have been employed in putting together scanty and often unreliable data for different areas of coverage. The nine existing national-income estimates are unlike in so many basic respects that it would be futile to invest time and statistical ingenuity in an effort to work them into some sort of series.

Presumably, if India's per-capita income had fallen 50 per cent, or had doubled or trebled over the years from the 1870's to the 1940's, then such a change would have been reflected in the national-income estimates, no matter how crude, unreliable, or noncomparable they may be. As a matter of fact, the basic data on India's production, some of which will be cited in the second part of this paper, indicate that no change of such magnitude has occurred. Whatever *real* change there has been has taken place within much smaller limits. It is the cardinal weakness of the existing national-income estimates that they are hopelessly inadequate to indicate these less drastic changes. We simply cannot tell from them whether total national income has increased proportionately with the rate of population growth, has slightly exceeded it, or has lagged somewhat behind. Contemporary investigators who seek to determine these relations will have to start all over from the beginning. They will have to turn to such statistical data as survive, and work them up anew. In the process the earlier estimates should certainly prove valuable in indicating types of data to be sought, difficulties to be resolved, and mistakes to be avoided. As of 1953, however, we remain without reliable or comparable national-income estimates for any phase of India's economic development.

TRENDS IN OUTPUT*

In the absence of a series of comparable national income estimates, what statistical light can be thrown on the major trends in India's modern economic development? We begin with agriculture, since it constitutes the bulk of Indian productive activity, and also since more data are available for it than for any other segment of the economy.

The annual series, *Agricultural Statistics of British India*, was first issued in 1886. By the 1890's it listed the acreage sown in the various crops throughout almost all of British India and some of the Indian States. In the same decade also appeared the first number of an annual series, *Estimates of Area and Production of the Principal Crops in India*, the coverage of which, however, was not so complete as that of the former series. It is significant that these series came into being largely as a result of the demands of commercial interests seeking uniform and adequate statistics to guide them in trade and speculation. A recent study based on the data in these two series provides us with estimates of the total production of agricultural crops in virtually all of India (omitting Burma) for the years 1893/94 to 1945/46.³⁹

The central feature of this study is the effort to utilize the incomplete historical data on acreage under crops and on estimates of output as a basis for estimating total output of all agricultural crop production in India since the early 1890's. It is recognized that this is a hazardous undertaking and that its results are provisional. Doubtless still more refined statistical treatment of the available agricultural data is possible; but we may wonder whether such refinements would lead to results different in *major* respects from those of Mr. Blyn. In Chapter II of his manuscript a detailed account is given of the methods he has employed.

In using Blyn's study, the assumption is made that the agricultural statistics are fairly reliable. This is a large assumption. By and large, for British India, and perhaps for India as a whole, I think it can be defended, no matter what the defects in the data may be for such important areas as Bengal and Bihar. In any event, at the present stage of our knowledge of India's economic evolution, I think it is a wiser assumption to adopt than the opposite, nihilistic assumption, which involves throwing out the older agricultural statistics altogether.

The outstanding conclusion of this work is that gross production of food crops in India during the entire period remained nearly constant. It is remarkable that even the slight change, especially since World War I, has been in a downward direction. This tendency in particular applies to the rice crop, which constitutes roughly half of total food crop production. Changes in the production of other crops have failed to alter this

* This section was written with the assistance of George Blyn.

³⁹ George Blyn, "The Agricultural Crops of India, 1893-94 to 1945-46: A Statistical Study of Output and Trends" (unpublished MS, South Asia Regional Studies Department, University of Pennsylvania, 1951).

trend, despite considerable expansion of the wheat crop. Table IV.1 below summarizes the annual estimates of production in averages for five decades. The arithmetic mean of the annual estimates for the period as a whole is 71.7 million (long) tons.

TABLE IV.1

ALL-INDIA ESTIMATES OF GROSS FOOD-CROP PRODUCTION, 1893/94 TO 1945/46

YEARS	AVERAGE ANNUAL PRODUCTION (MILLION TONS)
1893/94 to 1895/96	73.9
1896/97 to 1905/06	71.5
1906/07 to 1915/16	74.0
1916/17 to 1925/26	73.3
1926/27 to 1935/36	69.6
1936/37 to 1945/46	69.3

NOTE: Crops included in totals are rice, wheat, barley, jowar, bajra, ragi, maize, gram, and "other foodgrains and pulses."

SOURCE: Blyn, *op. cit.*, p. 121.

In contrast with this constant or slightly decreasing trend in food-crop production is the pronounced growth in commercial-crop output. The largest increases among such crops have been in groundnut, cotton, sugar cane, and tea. On the basis of a production index for food crops, commercial crops, and all crops, constructed by weighting volume of output with average prices for each crop during the quinquennium 1924/25 to 1928/29, and setting the initial period, 1893/94 to 1895/96 at 100, it can be seen that commercial-crop production nearly doubled over the time span studied.

What is striking is that this increase in commercial crops was achieved largely at the expense of food-crop production. For although total crop output shows a distinct upward movement, the magnitude of the over-all increases is very small, the net increase from the initial to the concluding period being only 10 per cent. Thus it appears that the over-all increase was completely accounted for by the commercial crops, and that the large increase in the latter was, at least in part, obtained by reducing food-crop output. The output ratio of nonfood to food crops, which was roughly 1:5 in the initial period, rises to nearly 1:2 by the concluding decade of the study. Data describing the above movements are summarized in Table IV.2.

The figures which have just been cited for total output accord well with the statistics for net acreage sown in the various crops of British India during the period from the 1890's to the 1940's. From about 190 million acres sown in the initial period, cultivation was extended to about 210 million acres in the concluding decade, an increase of about 10 per cent.⁴⁰

⁴⁰ This, however, does not account for changes in the acreage under double-cropping, or for changes in the area cultivated in the Indian States.

TABLE IV.2
ALL-INDIA ESTIMATES OF FOOD-CROP, COMMERCIAL-CROP, AND TOTAL-CROP
PRODUCTION, 1893/94 TO 1945/46

YEARS	INDEXES OF AVERAGE ANNUAL CROP OUTPUT			NONFOOD TO FOOD-CROP OUTPUT RATIO
	Food	Commercial	Total	
1893/94 to 1895/96	100	100	100	.22
1896/97 to 1905/06	96	105	98	.24
1906/07 to 1915/16	99	126	104	.28
1916/17 to 1925/26	98	142	106	.32
1926/27 to 1935/36	94	171	108	.41
1936/37 to 1945/46	93	185	110	.44

NOTE: Food crops included are listed in Table IV. 1. Commercial crops included are linseed, sesamum, rapeseed and mustard, groundnut, castor, sugar cane, cotton, jute, indigo, coffee, tea, and tobacco. The indexes are based upon aggregates weighted by the average price of cash crops for the period 1924-25 to 1928-29.

SOURCE: Blyn, *op. cit.*, p. 117.

The striking fact about this slow upward movement in agricultural crop production is that during the same decades population increased substantially. Population growth has proceeded in fact at an increasing rate, especially in the years following World War I. The average rate of population increase per decade from 1901 to 1941 is 6.4 per cent, but the average rate of increase in total crop production during these five decades is only 2.3 per cent. Population has thus grown nearly three times as fast as total crop output.

The significance of this relationship is brought out more clearly by the per-capita output figures for food crops and total crop output. If we use the data from which Table IV.2 was prepared together with the population statistics, and convert the results into indexes with the initial period set at 100, we find that total crop production per capita fell by 20 per cent from 1893-96 to 1936-46. Food crop production per capita fell by an even greater amount, to 32 per cent less than the early level. Putting the relationship into terms of pounds of food crop output (as in Table IV.1), rather than index units, we see that per-capita production fell from nearly 600 pounds per year to about 400 pounds in the closing period. Table IV.3 summarizes the per-capita output movements.

In short, the statistical survey indicates that since the 1890's total output of all crops has risen, but unimpressively; total output of food crops has fallen off; and per-capita output of both food crops and all crops has declined impressively. The trend in agricultural output over the last sixty years may be characterized as stagnation.

To what extent does this statistical description accord with our other sources of knowledge about the development of India's rural economy? We can say, first of all, that there has been no basic change in farming techniques since the close of the last century. The fundamental unit of "enterprise" in Indian agriculture has remained the individual peasant

TABLE IV.3
ALL-INDIA ESTIMATES OF AVERAGE ANNUAL PER-CAPITA FOOD OUTPUT,
AND ALL-CROP OUTPUT, 1893/94 TO 1945/46

YEARS	POPULATION INDEX	OUTPUT IN INDEX UNITS PER CAPITA		OUTPUT OF FOOD CROPS, POUNDS PER CAPITA
		FOOD CROPS	ALL CROPS	
1893/94 to 1895/96.....	100	100	100	587
1896/97 to 1905/06.....	101	95	97	560
1906/07 to 1915/16.....	107	91	97	547
1916/17 to 1925/26.....	109	90	98	538
1926/27 to 1935/36.....	120	78	90	461
1936/37 to 1945/46.....	138	68	80	399

NOTE: 1. Decades approximately centered on census years.

2. Population during 1893/94 to 1895/96 taken as that for 1891.

3. Base period, 1893/94 to 1895/96, equals 100.

4. For other decades it is assumed for working purposes that the population in the census year is an approximate average of nearly equivalent periods prior to and after the census.

SOURCE: Blyn, *op. cit.*, pp. 117-121.

family. Each family, whether its status is that of dwarf proprietor or of petty tenant, tills its own tiny patches of soil, using the implements and methods prescribed by tradition.

Numerous observers have noted this failure of the cultivating peasantry to take advantage of modern scientific advances, even in cases where the knowledge would seem to have been made readily available through governmental and other sources. Lack of progress has been ascribed to the stubbornness of the peasant, to his conservative or "backward" outlook. In point of fact, however, the peasant's freedom of choice is severely limited by the size of plot, the implements, the animal power, and above all the capital available to him. Even minor improvements in technique typically demand *some* increase in outlay.⁴¹ The decisive factor in Indian

⁴¹ We may cite here observations made two decades ago by Dr. Harold H. Mann, author of a number of works on India's rural economy and Director of Agriculture in Bombay from 1921 to 1927:

"And it would really seem to be true that readiness to adopt new methods is the characteristic of the Indian cultivators, provided they are *proved*, to their own satisfaction, to be of advantage, and provided they give a return which will warrant the borrowing of capital at high interest. To put it another way, economy of capital or out-of-pocket cost is more important than economy of running expenditure, where the labour is a man's own and has to be provided with food and maintenance in any case. . . .

"Hence, throughout India, implements will be found to be crude, rough, less economical in working than those which might easily replace them and which are available at a higher capital cost. The manures and fertilizers used are generally those which can be obtained locally, and with little or no cost except for labour. The most welcome improvements are those which, like an improved type of seed, will provide increased returns with little capital outlay, even if much more work is required in raising the crop. If the result is good and the returns are increased, then other improvements immedi-

agriculture during the twentieth century, and probably in the last quarter of the nineteenth as well, has been the chronic extreme shortage of capital of the great bulk of the cultivating peasantry.

The explanation for the leveling-off of output, then, is to be sought in the circumstances under which resources needed for agricultural expansion dried up or were siphoned away. We can examine first the impact on rural India of the new systems of land tenure introduced by the British. Two considerations were foremost in the formulation of British land policy in India: (1) getting allies in India, so as to consolidate British rule; and (2) securing maximum amounts of revenue from the land. The influence of the first consideration was paramount in the huge area of eastern India known at the close of the eighteenth century as the Presidency of Bengal. Here the British brought into being a strange group of great landlords, a class whose annual payments of land revenue to the state were fixed in 1793 at sums which were to remain unchanged for all time to come—hence the name for this arrangement, the Permanent Settlement. Since the income and security of the new landlords depended, in the last analysis, upon the strength of the British regime, the landlords as a class were expected to be strongly pro-British, and in fact they did turn out to be staunch supporters of the imperial rule. The disadvantages of this type of land-revenue arrangement soon appeared. The British administration found that its receipts from the chief source of revenue, the land, were limited, fixed by the Permanent Settlement.

As they conquered other parts of India, therefore, the British tried out other land-revenue systems. In the southern parts of Madras they made settlements on a field-by-field basis with the individual cultivating peasants (the *ryots*—hence the name, *ryotwari* settlement). In the central parts of India they later made settlements on an “estate” basis with groups of leading families in the villages. Both these individual and “estate” settlements were for periods of 20, 30, or 40 years each, at the end of which they were to be reassessed. Generally speaking, the original settlements were pitched at levels calculated to yield high returns to India’s new rulers.

If this were all the British had done, the advent of their rule would scarcely have had the striking impact that it did. After all, the Indian peasants had been used to demands by their rulers for a large share of the returns from the soil; and many different ways of obtaining high returns had been devised. The British added three things: a demand throughout the areas they ruled directly for payment in money; for payment in full each year (i.e., a relatively *inflexible* demand); and within the context of a private property structure of landholding. A word or two of comment is in order on each of these. While the demand for pay-

ately become acceptable” (Harold H. Mann, “The Agriculture of India,” *Annals of the American Academy*, CXLV, Sept., 1929, part II, 80).

ment of land revenue in money was not unprecedented, it had never before in Indian history been established over so wide an area as that ruled by the British. It resulted in great pressure on the peasantry to produce cash crops for the market, in addition to the older subsistence crops for personal consumption. As the income of the peasants became more and more dependent upon the sale of their commercial crops, they came to need regular supplies of credit to tide them over from one financial year to the next. This need was met by local moneylenders and marketers, who grew rapidly in numbers, prestige, and power.

The relatively inflexible demand for payments to the state each year meant that in times of bad crops or low prices the peasantry either had to default or had to borrow from moneylenders. Either alternative could soon lead to ruin. Only a small percentage of the peasants who fell into dependence on rural moneylenders ever escaped. Defaulting meant speedy ruin in the new structure of land relations which followed the application to India of British concepts of private property in land. In the new British order land became private property, mortgageable, transferable, alienable. Landlords in Bengal, holders of rights in "estates" in Central India, *ryots* in Madras, all found that they could borrow against the value of their "property." But they also soon found that a mechanism of courts, warrants, and decrees had come into being, whereby their creditors or the state could dispossess them if they did not pay up on their loans or mortgages, or did not make the land-revenue payments owed to the state. In effect the new forms of land tenure and legal procedure introduced by the British afforded to the landlords and the providers of credit a set of unprecedented mechanisms for drawing away from the peasants everything but a bare minimum required to keep cultivation going. In no other period of Indian history can we find so large, so well-established, and so secure a group of wealthy landholders as that which grew up and flourished between the 1790's and the 1940's.

Another by-product of British rule which served to worsen the position of the peasantry was the increase in population. The historians tell us that in pre-British days land was relatively abundant and labor in relatively short supply. In cases of sustained oppression, the peasants could check the abuses of their rulers by simply getting up and moving from one realm to another. To most rulers the threat of such a flight was a very serious matter, since their revenues depended on the extent to which their land was occupied. This mode of pressure, however, could be applied by the peasants only so long as their numbers remained relatively scarce.

During the nineteenth century, as part of the "differential diffusion" to which we have referred above, steps were taken to deal with the more easily controllable epidemic diseases. Sanitation and other public health measures were introduced, and in the larger cities water supply was improved. As a result of these and similar services, the death rate was considerably reduced. The birth rate, however, was unaffected, and remained

relatively high. Inevitably, therefore, population grew. Had there been a large-scale process of urbanization and industrialization, the increase in population might have been absorbed in the cities. But the growth of modern industry in India has been very limited. The net effect of population increase, therefore, has been intense rural crowding.

The pressure on the land became apparent as far back as seventy-five years ago. A series of striking observations to this effect were made in a course of lectures delivered in Edinburgh in 1879 and 1880 by William Wilson Hunter, who was at the time perhaps the best-informed British analyst of Indian social and economic affairs:

After a minute comparison of rural India at present with the facts disclosed in the manuscript records, I am compelled to the conclusion that throughout large tracts the struggle for life is harder than it was when the country passed into our hands. . . . The sad result seems to be, that whether we give over the land to a proprietary class, as in Bengal, or keep it in our hands, as in [the] Southern India [*ryotwari* system], the struggle for life grows harder to large sections of the people.

In provinces where, a hundred years ago, there was plenty of land for everyone who wished to till it . . . human beings [are] so densely crowded together as to exhaust the soil, and yet fail to wring from it enough to eat. Among a people whose sole means of subsistence was agriculture . . . a landless proletariat [is] springing up, while millions more [are] clinging to their halfacre of earth apiece, under a burden of rack-rent or usury. . . . More food is raised from the land than ever was raised before; but the population has increased at even a more rapid rate than the food supply. . . .⁴²

In the years since Hunter made these remarks the population has increased considerably. The amount of land available to the average peasant family has become less. Because of the competition for land, the landowners and moneylenders have been able to make the peasants agree to more and more onerous terms for the use of the soil and of credit. Enforcement by British officials of law and order has served to protect the landholding groups from the more violent expressions of popular resentment. It is in this setting that the cultivators, while retaining in their own hands the conduct of agricultural production, have been stripped of the resources with which to increase their output.

A real question which remains is: Granted the special position and large income of India's landlords, moneylenders, and marketers, what have they done with their incomes? One part of the answer is clear—they have not made investments in agricultural *production*. Landlords

⁴² *The India of the Queen, and Other Essays* (London, 1903), pp. 99, 138, 147, and 152-153.

may try to gain control of more land; moneylenders and marketers may expand the range of their existing business operations; but they do not invest capital for the purpose of making profits of enterprise in agricultural *production*. Leaving aside the tea and other plantations (as highly atypical phenomena in India), the rarest figure in the modern Indian countryside has been a genuine capitalist producer—that is, a producer who invests capital in agriculture and strives to secure a maximum profit primarily from the efficiency with which he handles his labor force and his land in the productive process. Rather, the Indian landowners have found rent and usury, as opposed to capitalistic profit, easier, safer, more congenial, and more lucrative. Thus, for example, in testifying a quarter of a century ago before the Royal Commission on Agriculture in India, Mr. M. A. Momen, Director of Land Records and Survey in Bengal, asserted: "I have got sufficient lands and do some cultivation myself. I find however that letting them out on half the produce [sharecropping] is more paying than cultivating the lands with my own cattle and by hired servants."⁴³

Once the land-revenue policies were fixed, the policy of the state in respect to Indian agriculture was largely hands-off. There was no serious effort by the government of India to make the landowning groups take interest in the productive side of agricultural operations. Nor did the state undertake on its own part any major attempt to improve output, as for example was the case in Meiji Japan.

In retrospect, the net effect of British rule was to change drastically the social fabric of Indian agriculture, but to leave virtually unaffected the basic process of production and the level of technique. The upper strata of the new agrarian society benefited handsomely. The position of the cultivators deteriorated. Capital needed for the development of agriculture was siphoned off, and the level of total output tended toward stagnation.

By contrast with agriculture, there seems little doubt that total non-agricultural activity has been rising in India over the last sixty years. The contribution to the total national product from modern industry, domestic commerce, and the services has been on the increase. Whether, in view of the static condition of agriculture and the growing population, this expansion of other sectors has been sufficiently large to maintain the level of per-capita total product is a difficult question to answer. To make a reasonably accurate calculation, we would have to know the relative weight of product from nonagricultural activity as compared with the agricultural; and we would also need to establish the trends in product from the various nonagricultural sectors. At present we cannot satisfy properly either of these two requirements. We have no suitable studies of the total product of modern industry, or of domestic trade. We know

⁴³ Cited in the MS by Dr. Chen Han-seng, "Agrarian Regions of India and Pakistan" (Philadelphia, 1950), chap. i, pp. 24, 61.

that old-style village handicrafts have been declining; but we do not know the extent to which they have been replaced by newer handicrafts based on materials which have been partly processed in factories. A beginning has scarcely been made in estimating the contribution of the services. These are all fields in which sustained research and analysis are required.

In default of precise data, recent writers on Indian economic development have put forward two different opinions. Some hold that in the twentieth century per-capita income has been rising; others, that it has not been rising. There is a third logical possibility, that per-capita income has been *declining*. Until knowledge of India's economy and its evolution comes to rest on a more solid foundation, it would seem premature to rule out this third possibility.

The Scale of Economic Growth in Japan, 1868-1938*

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THE TRANSITION TO INDUSTRIALISM

THE JAPANESE are the one people of Asia thus far to achieve a far-reaching industrialization of their economic life. This process, carried through over the seventy years preceding World War II, endowed them with the greatest productive potential for material well-being in the Far East, besides making them the foremost military power of the region.

Two considerations suggest the importance today of re-examining Japan's experience in the transition to industrialism. First, it may illuminate more clearly those patterns of her economic growth which were distorted and destroyed after 1936 by a decade of war and must be re-created in certain essentials to provide for her peaceful needs in the future. Second, other nations embarking on economic development may find constructive lessons in the Japanese experience—lessons which have been all too often neglected, perhaps because the plutocratic and militaristic features of prewar Japan have suggested that its pattern of modernization is more to be guarded against than emulated.

The historic stages through which Japan accomplished this industrial transition are well known. The political reformation of 1868 released a burst of productive energies long latent under the *ancien régime*, and catalyzed them with a flood of stimuli and techniques from the West. The first quarter-century established a new political and legal framework within which the new technology was pioneered in experimental fashion. During the next twenty years, beginning in 1893, the foundation of industrial capitalism was laid as Japan passed through two successful but limited wars with China and Russia. Meanwhile, through this Meiji era, the principal growth in national income took place in agriculture, small-scale industries, and service trades through modest but pervasive innovations that required no radical departure from traditional modes of production. The

* Adapted from chap. iii of the author's *The Economic Development of Japan* (Princeton, 1954), with the permission of the Princeton University Press.

period 1914-29, thereafter, saw the continued expansion and diversification in factory industry and foreign trade, first in the spectacular boom of World War I, and later in the deflationary postwar decade.

With the Great Depression of 1929-32 came the collapse of the yen, releasing a fresh wave of Japanese manufactures in foreign markets. At home renewed deficit spending occasioned by the invasion of Manchuria reinforced the general process of industrial expansion. Then, as its tempo increased, resources were turned increasingly to armament. As the military counterrevolutionists proceeded to forge the New Economic Structure, which began to take shape in 1938, Japan closed a long era of secular growth in her civilian economy. Its foundations were now destroyed in an all-out bid for empire in East Asia. Today they are again being painfully reconstructed in a setting which—thanks in no small measure to Japanese militarism itself—is far less favorable than a generation ago.

In varying degrees almost every aspect of Japanese society responded to the new forces at work through the prewar decades. It was in the economic realm, however, and such related fields as national defense and public health, that the changes were most profound. Characteristically the Japanese assimilated the applied arts of the West more readily than the spirit and ideals of Western culture. Even in economic life the transformation proceeded unevenly, with tenacious lags and resistances. Everywhere the new jostled the old. Yet the changes at work were both pervasive and profound. If they were more pronounced in the cities, and especially in the superstructure of capitalistic finance and industry, they were by no means confined to these spheres. Much remained of the simple, premachine economy of Tokugawa days, especially in the countryside. But increasingly this was giving way to a reorganization and expansion of the country's productive resources along the lines pioneered by the West a century or more before.

By the end of the twenties the first difficult stages of this transition were completed. The process of modernization and growth had extended in varying degrees to all sectors of the economy. In economic maturity and productive power Japan was still far behind her advanced industrial competitors in the West. Yet she now invited comparison in many respects, no longer with her Asiatic neighbors, but with a number of Western nations which tradition and circumstance might seem to have endowed with far superior advantages.

One significant comparison is the amount of energy utilized by a nation in productive activity, including energy from fuels and power as well as draft animals and human labor. For an economy shifting from a vegetable to a mineral base, the growing extraction of energy from inanimate sources is fundamental. Here Japan's prewar position was still quite inferior to that of the United States and Western Europe. Equally it was now far above that of most of the rest of the world. Corroboration is found in a study that combines all forms of energy con-

sumed, animate and inanimate, in equivalent kilowatt-hours of electricity. Per-capita utilization from all sources for production and transport is estimated as follows for a number of countries in 1937:¹

United States	6,996	Poland	961
Germany	3,461	Brazil	450
U.S.S.R.	1,380	India	289
Japan (1936)	1,251	Indonesia	197

Associated with this rise in productive power are other evidences of a socioeconomic character which mark the intermediate position Japan had reached at this time in the scale of world economic development. In life expectancy, for example, the Japanese were now halfway between the "elite" nations of the West, and the populations of Asia still ridden with grinding poverty, malnutrition, and disease. Infant mortality had fallen until in the prewar decade it compared favorably with the situation in Eastern Europe. It was at least 30-50 per cent better than the rate still prevailing in most other Asiatic countries. In literacy the Japanese had also gained a favored position, thanks to years of compulsory primary education. In output of goods and services per capita, Colin Clark ranks Japan alongside Italy and Poland during the decade 1925-34.² Finally, her formidable army and navy, and the war she was about to undertake, testify to the economic surplus which could now be produced and withheld from civilian needs in the interest of national power and aggrandizement.

This intermediate position in the scale of economic development is further evidenced by Japan's trading relations with the world toward the end of the prewar era. Here one might describe her as "facing two ways," as in so many other aspects of her national life. She traded heavily with both East and West, but along rather different lines. On the one hand, to the United States, the Dominions, and Europe, she sold a variety of semimanufactures, notably raw silk, together with other simple types of manufactures also embodying large amounts of low-wage labor. On the other hand, she had now also emerged as a competitor with Europe in exports to Asia of textiles and other consumer goods, even some machinery. Her import trade reflected the same duality: heavy purchases of food and raw materials from both Asia and the West, and continued dependence on the United States and Europe for industrial equipment of the more advanced and specialized types. The Japan of 1925-35 did not fit neatly into the major patterns or orbits

¹ U. S. Department of State, *Energy Resources of the World* (Washington, 1949), Table 51. "Including the animate and inanimate energy used in production, processing and transportation, but excluding the energy used in domestic, commercial and public establishments, a small part of the energy used in farming and the energy lost and stored. The fuels used in overseas bunkers have been allocated on the basis of merchant fleet tonnages rather than of loading points."

² *The Conditions of Economic Progress* (London, 1940), p. 41.

of world trade, nor the usual classification of trading nations as industrial, agricultural, etc.³

In her domestic economic structure, nevertheless, Japan's center of gravity had already shifted heavily to the side of manufacturing industry and related services. Partly this grew out of her industrial specialization in world trade. Partly it reflected the special encouragements offered to certain strategic industries by a solicitous government. More largely it was associated with the long secular rise in income and productivity per capita, which redirected civilian demands increasingly toward the products of manufacturing and service industries. As a result the principal sources of national product, at market valuation, came to center increasingly in these trades. To a lesser extent they also now afforded the principal sources of employment for the working population.

Unfortunately this structural change cannot be measured historically with any assurance. Certain Japanese estimates—the best thus far—are cited towards the close of this paper. Here it may suffice to note the stage reached during the interwar years, after a half-century of industrialization. Table V.1 distributes the labor force and national income by its chief industrial divisions in 1930. Agriculture, forestry, and fishing

TABLE V.1
LABOR FORCE AND NET INCOME PRODUCED IN JAPAN PROPER,
BY INDUSTRIAL DIVISIONS, 1930

	LABOR FORCE BY CHIEF OCCUPATION*		NET INCOME PRODUCED† (AT MARKET PRICES)	
	Numbers (1,000's)	Per Cent	Amount (mill. yen)	Per Cent
Agriculture, forestry, fishing	14,699	49.6	1,892	18.5
Mining	315	1.1	216	2.0
Manufacturing & construction	5,876	19.8	3,268	31.9
Transport & communications	1,159	3.9	695	6.8
Trade, finance, & real estate	3,670	12.4	2,075	20.3
Professions & other private services	2,676	9.0	961	9.4
Other government services	1,154	3.9	1,132	11.1
Total	29,620	100.0	10,239	100.0

*Adapted from the census report, Imperial Cabinet, Bureau of Statistics, *Shōwa Gō-nen Kokusei Chōsa Sainhū Hakokusho* (Tokyo, 1938), pp. 348 ff. Persons are classified according to the industry in which they reported their chief employment on Oct. 1, 1930, or, if unemployed, where they were last employed. Certain detailed census categories are shifted and recombined here to arrive at a classification roughly consistent with that of national income. For example, employees of state-owned railways and electrical communications are moved to these industrial categories. A miscellaneous category of 71,000 persons is omitted.

†Estimates of the Imperial Cabinet, Bureau of Statistics, as revised by the U. S. Office of Strategic Services and published in U. S. Department of State, *National Income of Japan* (Washington, 1945), Section A, and with minor modifications by the author. The figures purport to value net income produced within Japan proper at market prices; they exclude imputed rents on owner-occupied dwellings; and they are net of depletion and the bulk of business taxes. They were computed mainly by the gross-value-minus-cost method, except that certain service incomes are the sum of wage and salary payments plus an actual or imputed return on capital. Net income in finance is grossly understated, as it excludes interest and dividends paid to banks which cannot be deducted from the gross product of the paying industries.

³ See League of Nations, *The Network of World Trade* (Geneva, 1942), pp. 61-63, 83.

no longer occupied more than 40 per cent of the effective labor force (with allowance for extensive part-time employment). Nor did it provide more than 20 per cent or so of the country's net income, at the depressed farm prices of 1930. Industry originated over 30 per cent of net national product, and various private and governmental services the remainder. Obviously Japan had moved a long way from the agrarian patterns of the traditional Far East, though her industrial specialization was not yet that of a Britain. Perhaps the best rough comparison would be with Germany about 1890.⁴

All international comparisons like the foregoing are necessarily imprecise. And they are subject to a good deal of modification and qualification in the light of conditioning factors. They do support the conclusion, however, that the Meiji "Renovation" set in motion a genuine economic revolution. Whatever its limitations in the political realm, and its uneven progress everywhere, it initiated a fundamental reorganization of large sectors of economic life. The resulting growth in Japan's productive powers went ahead with cumulative momentum.

This paper is concerned primarily with only one aspect of Japan's experience. Its purpose is to assemble evidence bearing on the rate and magnitude of growth in the Japanese economy through the prewar decades. Only incidentally does it touch on the processes by which this growth took place: the expansion of population and resources; the acquisition of new skills; the appearance of a new mobility; the institutions of capital formation; the strategic role of foreign trade; etc. These are treated in the larger study from which this paper is taken. Here they are largely left aside in order to focus on the net result in terms of a growing output of current goods and services. First the main components of the economy are examined; then an effort is made to appraise the over-all increase in national income as related to population and standards of consumption.

It may be well at the outset to note the statistical problems posed in such a task. First, there are the usual technical limitations inherent in any summary measure—e.g., a production index—which must strike an average between quite divergent tendencies. The longer the period of comparison the less meaningful it becomes, especially as it necessarily fails to reflect qualitative changes which may be of crucial importance. Second, one encounters major inadequacies in the basic Japanese data, especially through the Meiji period. Much of Japanese economic life remained organized on a family basis with little development of those rational practices of accounting which are the foundation of economic statistics. Under such conditions the collection and interpretation of quantitative data present formidable difficulties, particularly as the central statistical agencies of prewar Japan were comparatively untrained and understaffed.

⁴ For an analysis of these structural changes accompanying economic growth see *The Economic Development of Japan*, chaps. viii-ix.

Many historical series show a systematic upward bias arising simply from more complete enumeration as time went on. Moreover, statistical reporting in certain fields was subject to bias and distortion of a more calculated variety, arising from motives of tax evasion, or considerations of national or local prestige. Finally, the failure often to accompany published data with essential details and explanations creates a series of pitfalls and exasperating puzzles that baffle even the most experienced student.

These deficiencies need not prevent one from forming reliable conclusions as to the general direction of economic growth, or the approximate order of magnitude of many of its components. But they argue for discriminating judgment at every point, and against precise measurement in most matters. It is better to be approximately right, as one student remarked, than precisely wrong.

NATURAL RESOURCE INDUSTRIES

Growth of Production

In the extractive industries, first of all, Japanese production statistics are fairly abundant, especially since about 1905. Here also one has comprehensive indices of the physical volume of production annually from 1878 to 1934, prepared at Nagoya Commercial College under the direction of E. F. Penrose, Y. Koide, and their colleagues. Table V.2 shows the expansion of primary production depicted in the Nagoya series, with the earlier years omitted because of unreliable data, and with a projection to 1936-38 by means of supplementary indices.

The apparent growth of primary output in prewar Japan is impressive, even if we discount the rate suggested here. Japanese economic development is too often described largely in terms of industrial expansion, more particularly the rise of factory industry. The corollary, stated or implied, is that the extractive industries failed to share largely in this expansion, owing to Japan's limited resources and technical backwardness in agriculture. Yet food production appears at least to have kept pace with population growth. Raw-material output surpassed it by a wide margin. When the constituent items of the Nagoya indices are recombined as food and industrial materials, they show the following comparative advance (Table V.2).

From the eighties on, under the stimulus of expanding markets, steady progress was made in enlarging the capacity of the extractive industries. This took many forms—applying modern methods in exploiting the country's mineral resources, especially coal; building up forestry reserves to provide sustained yields on a much larger scale; improving fishing boats and gear so as to utilize more intensively the rich resources of the nearby seas; extending the cultivated farm area through irrigation, drainage, and the settlement of Hokkaido, the early frontier region; raising acreage yields by double-cropping, better fertilizer, consolidation

TABLE V.2
PHYSICAL VOLUME OF PRIMARY PRODUCTION IN JAPAN PROPER, 1885-1938*
(INDICES, 1910-1914=100)

ANNUAL AVERAGE	AGRI-CULTURE†	FISHERIES‡	PASTORAL & DAIRY INDUSTRIES*	FORESTRY	MINING	TOTAL PRIMARY PRODUCTION§
1885-89 . . .	(55)	—	—	—	10	(44)
1895-99 . . .	69	41	50	—	28	60
1905-09 . . .	88	54	78	100	68	82
1910-14 . . .	100	100	100	100	100	100
1915-19 . . .	118	149	125	131	138	121
1920-24 . . .	120	225	162	135	133	130
1925-29 . . .	129	299	210	136	157	145
1930-34 . . .	134	343	277	149	166	150
1936-38 . . .	149	402	304	197	237	178

*For the period 1885-1934 these indices are based on annual indices prepared at Nagoya Commercial College and published in "Hompō Genshi Seisan-butai no Seisan Sūryō," Nagoya Chamber of Commerce and Industry, *Nagoya Keizai Toki Geppō*, VIII, No. 4 (May, 1936), Supplement, 60. For each of the extractive industries, the index is a geometric mean of production relatives for all items having a value exceeding 1,000,000 yen in the years 1929-33, weighted by annual average value of output in this period. In the above table they are shifted from 1921-25 to 1910-14 as 100.

The Nagoya indices are the most comprehensive and continuous series available for Japan. They are less representative of the period before 1905 than thereafter, however. Production data are lacking for a number of items in the early decades, and where they exist they are probably subject to an upward bias through more inclusive reporting. Also, the use of 1929-33 value weights imports some degree of upward bias throughout the period.

The 1936-38 indices are those of the Ministry of Agriculture and Forestry for agricultural, fisheries, pastoral, and forestry production, and of the *Oriental Economist* for mineral output, applied to the earlier Nagoya series (*Oriental Economist*, VII, No. 7, July, 1940, 414; Tōyō Keizai Shimposha, *Keizai Nenkan*, 1940, Tokyo, 1940, p. 3).

†Before 1905 there are no data on production of vegetables, fruits, or a number of the lesser industrial, tuber and root crops. Included in the earlier indices, however, is the bulk of agricultural output, consisting of cereals, beans, potatoes, mulberries (silk cocoons), and other industrial crops.

‡Total aquatic production, including pelagic fisheries outside home waters. By 1938 these overseas operations accounted for 38 per cent of the Japanese fishing catch.

§Before 1895 few livestock statistics are available, and not until 1905 are poultry and dairy products included.

¶The five constituent indices are combined with weights proportional to net value of output in 1930. The average for 1885-89 includes the Nagoya index for pastoral production (2% on a 1910-14 base), which is not shown here for the reason mentioned in n. 2.

	POPULATION*		FOOD PRODUCTION INDEX†	RAW MATERIAL PRODUCTION INDEX‡
	NUMBER (MILLIONS)	INDEX		
1895-99	42.2	83	67	48
1910-14	50.6	100	100	100
1930-34	66.3	131	145	175

*Pre-1920 figures are corrected "de facto" population, as given in Imperial Cabinet, Bureau of Statistics, *Shiwa Go-nen Ikō Waga Kuni no Jinkō* (Tokyo, 1930, pp. 3-5); later census estimates are from the Bureau's *Nippon Teikoku Toki Nenkan*, No. 58 (Tokyo, 1939), p. 6.

†"Hompō Genshi Seisan-butai no Seisan Sūryō," pp. 58-59. Here the food and nonfood items in the five component indices of Table V. 2 are separately combined, with each item weighted in proportion to its gross value of output in the years 1929-33. (Note that the weighting here differs from that by which the five component series are combined in the primary production index of Table V. 2, i.e., net value of output in 1930.)

‡This includes industrial raw materials, largely nonfoods. It comprises minerals, industrial crops, nonedible forest products, and nonedible seaweed.

of strips, and other improvements in farming methods. A few products like cotton and indigo declined in production, as cheaper sources of supply or substitutes became available from abroad. But they were the exception. For the most part the story was one of differential rates of growth in response to expanding and shifting demands.

During the twenty-five years before World War I the total production of food and industrial materials doubled, according to the Nagoya index (Table V.2). Even if the increase was in reality no more than two-thirds, the achievement was significant. For the entire Meiji period it was still greater. (The index itself actually advances from 16 in 1873 to 74 in 1911, but a good deal of the gain probably reflects the upward weight bias of the index, more complete reporting of crops, and perhaps also local pride in making a good showing.) Clearly, expansion was already under way in the eighties. And from 1885-89 to 1910-14 even rice, the staple crop intensively cultivated for centuries, is estimated officially to have increased 40 per cent in output, mainly through a 25 per cent gain in yield per acre. Comparable increases are recorded in other crops like wheat and barley. Much steeper rises occur in the case of silk cocoons, tobacco, coal, and metals. It is fruitless to attempt any close measurement of the over-all growth, but there is every reason to believe it was substantial.

The net-value product of the natural-resource industries grew more slowly than gross output, for physical growth was achieved partly by proportionately greater outlays for fertilizer, land maintenance, etc. Yet it must have accounted directly for much of the gain in national income and wealth before 1914. It could hardly have been otherwise in view of the preponderance of agriculture at the time. These extractive industries produced at least 40 per cent of national output before the turn of the century and a still larger share in the early Meiji years. Their growth contributed largely to the support of the increase in population from 1873 to 1911, estimated at 40 per cent, and to a modest improvement in its material well-being. It also provided a major share of the savings and tax revenues which laid the foundations of industrial and military expansion during the Meiji period. Agriculture particularly was a sector of the economy where output responded most readily and pervasively to new capital investment, as in irrigation and transport, and to simple improvements in technique—e.g., pest control, better seed, and double-cropping. Much of Japan's most productive capital formation took place in this sector, a good deal of it through small increments of peasant labor which imposed little demand on the financial institutions of the country.

Nor did growth in the extractive industries cease after 1914. From 1910-14 to 1930-34 the Nagoya series show a gain of 45 per cent in food production and 75 per cent in the output of raw materials. The average annual increase in the former was 1.9 per cent; in the latter 2.8 per cent. For food and raw materials in combination the aggregate growth over this twenty-year period was just 50 per cent (Table V.2) as contrasted with a 34-per-cent rise in the country's population. Still further advances were recorded up to the eve of World War II, under the stimulus of the trade and armament boom of the thirties.

By this time, however, the great initial gains which come from rela-

tively simple improvements in the traditional methods of an Oriental peasant economy had been realized. The cultivated area now approached its limits; in fact, it reached its greatest prewar extent in 1921.⁵ Since 1903, the year of the first annual land census, it had expanded only 15.8 per cent—from 12.9 million to 14.9 million acres.⁶ Thereafter it ceased to grow, and further advances in farm output depended mainly on increasingly heavy applications of fertilizer, coupled with other slow improvements in agricultural science. From 1912 to 1939, for example, the area in farm crops expanded only 4.4 per cent, while the consumption of nitrogen fertilizer rose 163 per cent, phosphoric acid 148 per cent, and potash 129 per cent.⁷ Mining companies likewise found it progressively more difficult to continue expanding production in the face of competition from foreign minerals. The output of copper and petroleum receded from its wartime peaks. And fishing fleets had to extend even farther the range of their operations with more expensive equipment and a larger scale of organization.

A more determined program of public investment in agriculture, coupled with other social and technical reforms, could doubtless have raised production from the plateau where it rested in the interwar years. For example, even with the spread of agricultural co-operatives the great need of the Japanese village was still for credit at less than 10-15 per cent or even higher rates of interest. In most of the natural-resource industries, however, fresh advances in total output were to be had only with heavier outlays of capital and labor. In certain products they ceased altogether; in others they continued only with the aid of higher tariffs and subsidies. Thus the rate of growth in primary production tended to taper off. Japan's potentialities for further expansion of income and wealth came to center mainly in industry, commerce, and the other service occupations.

Primary Production, Foreign Trade, and Industrial Progress

Obviously the growth of primary production was interrelated with industrialization at every point. On the one hand, as industry developed, it offered a widening market for the growing food and raw material surpluses of the countryside. It also contributed to their creation by facilitating improvements in transport, credit, crop fertilizers, fishing and mining technology, and other production methods. On the other hand, the rising productivity of the primary industries itself reinforced the growth in the

⁵ Asahi Shimbun-sha, *Nippon Keizai Tōkei Sōkan* (Tokyo, 1930), p. 682.

⁶ Probably the cultivated area had expanded considerably before the turn of the century. Only 10.1 million acres of paddy and upland fields were registered in 1877 under the new land tax. Yet even if this figure is comparable with the later ones, less than half of the increase in agricultural output is attributable to increased acreage. Similarly the number of farm families remained almost stationary at about 5.4-5.6 million households after 1903, and the average size farm at about 2.5 acres.

⁷ Supreme Commander for the Allied Powers, GHQ, Natural Resources Section, Report No. 93, *Fertilizer Practices in Japan* (Tokyo, 1947), p. 43.

market for manufactures and services. Purchasing power increased not only in the aggregate but also per capita, and a growing proportion came to be devoted to the output of the manufacturing and service industries in the form of better clothing and housing, processed foodstuffs, education, travel, health services, etc. In Japan, as commonly elsewhere, the income elasticities of demand for such amenities tended to be higher than for the simple elements of subsistence. Together with the demand for the industrial components of military power, they tended to redirect employments toward the more diversified balance exemplified in Table V.1.⁸

Through expanding circuits of exchange, moreover, the extractive industries provided a major share of the food and raw materials to sustain industrial growth. By far the largest amount came from agriculture itself. Expansion was more rapid in the fishing, mining, and forestry sectors, but they remained comparatively small in value of output. Japan's 5.6 million peasant families, cultivating their tiny plots, still contributed over 70 per cent of the net value of food and raw-material production in 1930. Even with its slower rate of growth, gross farm output appears to have doubled in the previous fifty years. (Table V.2.) As noted above, this came about mainly through increasing yields per acre. The cultivated area increased no more than 20 per cent after 1895, possibly less. By comparison crop statistics indicate that rice yields per acre increased by one third from 1894-1900 to 1931-40, while yields of wheat, tea, and barley doubled.⁹ Cereals remained the staple farm product, with rice leading by a wide margin. Rice tariffs and subsidies, national dietary habits, and above all the efficiency of rice culture as a means of extracting food energy from limited land—all combined to keep over half the cultivated area in rice production.

Following World War I Japan became increasingly dependent on overseas foodstuffs, even at the meager dietary levels which still persisted. By 1930 the nation was already relying on imports to the extent of nearly one-fifth of its entire food supplies (in brown rice equivalent).¹⁰ About half of these imported foodstuffs (in value) came from the two colonies, Korea and Formosa. In particular they furnished most of her rice and sugar imports, with the aid of Empire preference. Some 40 per cent of her fats and oil supply likewise was imported. In fact, such improvements in the national diet as occurred during the interwar years resulted in good part from these purchases overseas, for domestic food production in the aggregate just about kept pace with the expanding population, with perhaps a small added margin. To this extent it relieved a problem which would otherwise have become acute long before it did. Even so, like

⁸ *Economic Development of Japan*, chap. viii.

⁹ Supreme Commander for the Allied Powers, GHQ, Natural Resources Section, Report No. 108, *Crop Statistics for Japan, 1876-1946* (Tokyo, 1948), pp. 16, 20, 24.

¹⁰ U. S. Department of State, *Japan's Food, Beverage and Tobacco Position, 1928-36* (Washington, 1948), Table 1.

other nations industrializing on a slender base of natural resources, Japan now faced acute policy dilemmas regarding food self-sufficiency and the future of the agricultural population.¹¹

At least two other critical contributions to industrial growth were associated with the natural-resource industries. First, while the bulk of their output was sold at home, they also played a strategic role in the export trade. In the early years especially, such exports as tea, copper, coal, and cocoons (in the form of raw silk) were the principal means of paying for imports of foreign equipment and materials. Later most of them dwindled in relative importance as domestic consumption grew, and as a large export trade grew up in cotton textiles and other manufactures fabricated from imported materials. Yet they still furnished much of the net value embodied in processed exports. Notably was this true of raw silk, the cost of which was chiefly peasant labor devoted to the rearing of cocoons and spinning process. Silk was Japan's premier export for sixty years. It brought in over one-third of her gross earnings from commodity exports to foreign countries between 1870 and 1930. Being fabricated from domestic rather than imported materials, it actually paid for as much as 40 per cent of all such imports retained for domestic consumption. Besides this, it furnished a precious margin of money income for one in three peasant families—the more so as mulberry leaves could be grown on land ill-suited to food production, and the rearing of silkworms required chiefly seasonal farm labor. When synthetic fibers undermined its traditional supremacy in the American market during the prewar decade, the result was a profound dislocation in peasant livelihood as well as in the structure of foreign trade.

Among Japan's nonagricultural resources, in the second place, none played so significant a role in her industrialization as coal. Critically deficient as she was in metals and petroleum, she possessed coal reserves sufficient for her prewar needs except in anthracite and coking varieties. Moreover, they were located so that cheap water transport brought them within easy reach of her cities. Coal output passed 5 million tons in 1897, 20 million tons in 1913, and 40 million tons in 1936. Even then, output failed to keep pace with consumption by a margin of 10-20 per cent during the interwar years. The metallurgical industries in particular became dependent on imports of coking and blending coals from North China. With this additional supply, coal consumption in Japan during the thirties comprised over one third of the total for all Asia (excluding the U.S.S.R.). Coal alone furnished one half of all the fuel and power utilized in the country.¹² In addition it supplied the energy for a quarter of its electric power. The remainder came largely from Japan's other great energy source, falling water.

In the case of coal and copper, of foodstuffs, and of certain other

¹¹ *The Economic Development of Japan*, chap. vii.

¹² *Energy Resources of the World*, Table 44.

items, imports from overseas offered increasing competition to domestic producers. Mainly, however, imports were of such a character, especially industrial materials, that they tended to supplement rather than displace domestic production. Since the latter continued to grow, the total supply of primary products utilized in Japan increased in response to the combined gain both from internal and external sources. The growth relationships between manufacturing output on the one hand, and production and imports of industrial materials on the other, are evidenced—though not accurately measured—in the following quantum indices.¹³

	MANUFACTURING OUTPUT	IMPORTS OF FOREIGN RAW MATERIALS AND SEMIMANUFACTURES	DOMESTIC OUTPUT OF INDUSTRIAL MATERIALS
1904	59	55	67
1910-14	100	100	100
1920-24	217	190	140
1934	460	319	184

In reaching out for these foreign supplies, Japan capitalized handsomely on her position as an island nation with excellent sea communications both East and West. Moreover, she had the good fortune to pass through the early stages of industrialization in an era when world primary output was expanding, and when international trade was organized on a relatively free, multilateral basis. Except in cotton, her requirements did not bulk large in world markets. In good part they could be satisfied with cheap, low-grade qualities. Still further, foreign exchange was economized by the fact that imports were largely industrial equipment and materials, rather than consumer goods (except foodstuffs). This resulted partly from tariff and taxation, but more largely from the slow change in consumer taste and the rapid rise of domestic industries to accommodate such change.

Even then Japan's problem in financing overseas needs imposed a heavy burden, especially as it was complicated at times by large outlays abroad for war purposes. It was handled as well as it was only because she was able, despite resource limitations and social handicaps, to increase her own food and raw-material output perhaps as much as 200 per cent in the course of five decades. The increasing margin which she required from abroad was paid for mainly by current exports of manufactures and shipping services in the expanding world markets of the time. Only in one period, 1896-1913, did she borrow heavily abroad. Then it was largely to meet the drain on the national budget, the balance of payments, and the domestic-capital market imposed by huge armament expenditures attending the war with Russia.

¹³ For sources and details see *The Economic Development of Japan*, p. 390. The addition of imports from the colonies after 1914 would raise the import index 10 per cent or so in the later years.

Interdependence between the growth of primary production and the progress of industrialization was thus a condition of Japan's economic development no less than that of most countries. However, the rapidity with which the Japanese balance shifted away from the extractive industries was the outcome of peculiar environmental and social factors. Her specialized complement of resources, together with the world trading opportunities, worked strongly in favor of industrialization from an early date. This trend was further accelerated by the nature of the Meiji political settlement. From the beginning the scales were heavily weighted against agriculture, in the interest of the industrial and commercial classes and the national power ambitions they could serve.

To elaborate this latter aspect of modern Japanese history would carry us far afield.¹⁴ In brief, it centers on the institutional arrangements controlling the distribution of agricultural income, on the one hand, and the direction of government spending and private investment on the other. The peasant population mainly financed the military and development programs of the Meiji state. Their tax burden added heavily to the other disabilities they suffered upon entering the money economy. Large numbers were driven into debt and tenantry, from which escape was difficult. High rents, interest on the mounting farm debt, and government taxes channeled a large share of agricultural income into the possession of financial institutions, urban landlords, and the state treasury. Meanwhile the mounting surplus of farm population had to find employment largely outside agriculture. The families who remained on the farm also sought supplementary income, either through part-time employment in local industries, or through placing their reluctant daughters in the textile mills of towns and cities. Thus labor and income were steadily siphoned off the farm to provide material and human resources for industrial and commercial expansion.

These pressures upon the Japanese peasant are reminiscent of those experienced by the English yeomen a century earlier. In Japan, however, the new forces at work failed to produce any revolutionary change in the technology of agriculture, as in eighteenth-century England. Topography, the nature of rice culture, the superabundance of family labor, the social background of the peasant—all combined to perpetuate the small farm operated with hand labor. While these circumstances did not prevent a marked growth in production, they qualified and limited that growth. Poverty and insecurity tended to deprive the tenant farmer of both the means and the incentive for rapid gains in efficiency. And as much as 44 per cent of all usable land was tenanted at the end of the prewar era, most of it in small plots. The underlying drag on rural progress was the relentless pressure of population upon agricultural resources from which real relief could be sought only in expanding industrial opportunity. But this was reinforced by social and economic inequities which placed the

¹⁴ See "The State and Economic Enterprise in Modern Japan, 1868-1938."

small peasant at a still greater disadvantage in increasing his output and retaining a larger share of the fruits of his labor.

Taking all these circumstances into account, one is surprised to find a process of expansion as substantial as appears to have taken place in the utilization of Japan's land and sea resources. It would suggest that far greater potentials are latent in the countryside of other Asiatic countries more favorably endowed by nature and more concerned with the social goals of rural development.

MANUFACTURING AND SERVICES

When one leaves the realm of primary production and turns to other major sectors of the Japanese economy it becomes more difficult to present summary measures of the rate of over-all growth through the prewar decades. This is true of small-scale industry and construction, and still more of most of the service occupations—transport, communications, trade, finance, government, and the private professions. In these fields production is much less homogeneous and standardized. For many there is no yardstick of measurement at all save unstable money values. In manufacturing and the large-scale commodity-handling services, however, one can get some impression of the magnitude of growth. Several such indices extending over fifty years are presented in Table V.3.

The relative rates of advance depicted in Table V.3 conform to one's expectations. Most spectacular is the rise of manufacturing activity. This index climbs steadily from 69 in 1905-09 to 377 in 1930-34, a more than fourfold increase in twenty-five years. Such long-term comparisons are not very meaningful, because of the great changes which took place meanwhile in the character and composition of manufacturing. Clearly, however, the advance of Japanese industry far outdistanced the growth of primary production in this period. The latter failed even to double in this quarter century. (Table V.2.) In between are the indices for overseas trade and for transport, reflecting the combined influence of both types of commodity production. Here the gains are on the order of a two- to four-fold increase. If data were available on the other service trades—merchandising, finance, the amusements, etc.—one suspects they would tend also as a group to show these intermediate rates of growth.

By 1930 this shift in the center of gravity of the Japanese economy had reached the point where manufacturing and construction contributed nearly one-third of Japan's total national income. The whole range of service trades, taken together, provided nearly one-half (Table V.1).

At this midpoint in Japan's industrial transition, agriculture still afforded the principal occupation of 14.1 million people, nearly half the labor force recorded in October, 1930. The figure is problematical as a measure of employment, since it includes many part-time family workers. Nevertheless, a pronounced shift away from farming as the foundation of

TABLE V.3
GROWTH OF MANUFACTURING PRODUCTION, TRANSPORT, AND OVERSEAS TRADE
OF JAPAN PROPER, 1885-1938
(QUANTUM INDICES, 1910-1914=100)

ANNUAL AVERAGE	MANU- FACTURING PRODUCTION*	TRANSPORT		OVERSEAS TRADE*	
		RAILWAY FREIGHT TRAFFIC†	MERCHANT SHIP TONNAGE‡	VOLUME OF IMPORTS	VOLUME OF EXPORTS
1885-89....	—	2	19	16	16
1895-99....	37	24	38	46	31
1905-09....	69	68	78	87	61
1910-14....	100	100	100	100	100
1915-19....	160	161	142	124	168
1920-24....	217	218	213	190	142
1925-29....	313	277	227	242	217
1930-34....	377	256	238	277	327
1935-38....	600	355	263	347	505

*See Table V. 6 below.

†Tons of freight carried by government and private railways (fiscal years). 1910-14 annual average, 35,372,000 metric tons. Data for 1885-1925 from *Asahi Shimbun-sha, Nippon Keizai Tokai Sōkan* (Tokyo, 1930), pp. 807, 818; thereafter from Ministry of Finance, *Statistical Year-Book of Finance and Economy of Japan, 1948* (Tokyo, 1948), pp. 707, 709.

‡Gross tonnage of all steam, motor, and sailing vessels, unregistered and registered in Japan proper. Japanese junks measured in *koku* capacity are converted to gross tons at 10 *koku* = 1 ton. 1910-1914 annual average, 2,226,000 tons. Data for 1885-99 from Finance Department, *Financial and Economic Annual of Japan*, cited, *passim*, and Prime Minister's office, Statistics Bureau, *Japan Statistical Year-Book, 1949* (Tokyo, 1949), p. 436. This series is of limited significance because it lumps together ships of all types from ocean liners to 5-ton junks.

§A rough measure of growth in the physical volume of trade with foreign countries, Korea, and Formosa. Prior to 1930 the total value of imports and exports is deflated by the Oriental Economist indices of import and export prices (*Foreign Trade of Japan: A Statistical Survey*, Tokyo, 1935, pp. 690, 701). These indices are appropriately constructed in that they are aggregates of prices weighted by given-year quantities, the whole period being covered by splicing together three indices separately calculated for 1873-92, 1893-1903, and 1904-34. However, they relate only to articles in trade with foreign countries for which quantity data are available—80-90 per cent of such trade over the period. In using them to deflate aggregate imports and exports one implies, none too accurately, that price movements in all overseas trade not covered by the Oriental Economist indices (30 per cent or so of the total in the later years) were parallel to those in the trade covered.

• • The resulting indices are extended through 1930-38 by reference to the deflated values of trade with foreign countries and colonies as given by the U. S. Department of State in *The Place of Foreign Trade in the Japanese Economy* (Washington, 1946), Vol. II, Tables 16, 24.

national economic life had clearly taken place over the previous half-century. It now produced no more than 20 per cent of Japanese national income at prevailing prices. While one is uncertain what comparable figures for 1870 or 1900 would show—the estimates are of dubious accuracy (see below)—there is no doubt of the displacement of agriculture from its traditional supremacy by industry and related services. This shift was only accelerated in the decade 1930-40, despite the recovery of farm prices from their low level in 1930.

These differential rates of growth in major sectors of the Japanese economy involved many problems of structural change which cannot be examined here. One aspect may be mentioned, however, because of its particular relevance to the hopes of other Far Eastern countries now on the threshold of industrialization. Even Japan's rapid rate of industrialization failed evidently to reduce the actual farm population after the turn of the century. Some 5,359,000 farm families were recorded in 1903,

when an annual count was begun. There were 5,575,000 families in 1937, three decades later.¹⁵ Meanwhile, an increasing proportion may have developed supplementary by-employments of a nonagricultural nature; this is uncertain.¹⁶ In any case, it was no small achievement at least to prevent a sizeable growth in the number of farm families while the country's total population was swelling from 46 to 71 millions.

Economic planners in other densely settled Asiatic regions would do well to bear in mind Japan's inability to take people off the farm in large numbers, despite a spectacular rate of industrialization. If the figures are correct, she managed to enlarge the average farm only 10-15 per cent by a corresponding addition to the cultivated area after 1903. It remained hardly more than 2½ acres. Her neighbors all have greater potentialities for adding to farm lands. But Japan's experience seems to create a presumption that they will be unable to move large numbers of people out of agriculture, unless they are more successful than the Japanese in controlling population growth. Countries like China and India could easily experience a considerable increase in agricultural population, not a reduction, even with a quite successful industrial advance.

One other observation may be made at this point because of its general significance to the process of growth depicted here. Table V.3 presents an index of overseas (foreign and colonial) trade, which shows an upward geometric progression almost uninterrupted for fifty years. The volume of exports doubles every decade on the average. Imports also advance at about the same rate until the thirties. Meantime, of course, they changed radically in character. In 1872-82 exports were about equally divided in value between raw products and manufactures (including semimanufactures); imports were over 75 per cent manufactures. By 1935-38 exports to foreign countries were 85 per cent manufactures, and imports 62 per cent raw products. (The inclusion of colonial trade in the later period would raise the latter percentage still higher.) Japanese industries now drew their materials from all over the world. Their products likewise served far-flung markets, both in Asia and the West.

This rapid growth of overseas trade was associated at every point

¹⁵ *Meiji Taishō Okusei Sōran*, p. 507; *Nippon Teikoku Tōkei Nenkan*, No. 58 (1939), p. 67.

¹⁶ About 1918 J. W. Robertson Scott, a shrewd observer of the Japanese countryside, estimated that 5½ million farm families probably furnished no more than 10 million effective agricultural workers (*The Foundations of Japan*, London, 1922, p. 412). A 1938 investigation revealed that only 46 per cent of peasant households were wholly engaged in agriculture, 30 per cent "mainly" so, and 24 per cent reported it only as a subsidiary occupation (Supreme Commander for the Allied Powers, GHQ, Natural Resources Section, Report No. 101, *Japanese Agricultural Land Statistics*, Tokyo, 1948, p. 17). Nonagricultural pursuits appear to have occupied about 20 per cent of the working time of farm family adults, according to sample surveys, and to have contributed about the same percentage of net family income in cash and kind. See *The Economic Development of Japan*, chap. ix.

with the course of Japan's economic modernization and expansion. Initially, a swelling stream of imports formed a broad highway over which new ideas, skills, and tools poured in from the West. Export opportunities quickly appeared to stimulate new techniques of production and marketing and to create new pools of business savings and enterprise. As the years passed, access to world markets enabled the Japanese to build an industrial economy heavily dependent on food, materials, and equipment which they could secure more cheaply abroad than at home, paying for them with those products in which they were able to develop a competitive advantage in one market or another. No aspect of modern Japan is more spectacular than her emergence from virtual isolation to become within seventy-five years one of the great trading nations of the world.

Yet it was the home market again which continued to absorb most of the domestic output. This was necessarily true of the construction industry and a wide range of services—the professions, government, internal transport and merchandising, catering, etc. Even the shipping industry, important as it was to Japan's foreign commerce and balance of payments, remained largely a home industry so far as actual cargo tonnage was concerned. Of all water-borne cargoes entering Japanese ports during 1930-37, nearly 80 per cent was coastwise and interisland trade. In manufacturing industry as a whole, no more than 25-35 per cent of total production (by value) was sold abroad in foreign and Empire markets during the peak decade 1928-37. And one-third of these exports came from two industries, silk and cotton goods, which bulked far larger in the export trade than in the manufacturing economy.¹⁷

In quantitative terms, therefore, the expansion of Japanese industry and the service trades represented mainly a growth in the output of consumption and capital goods marketed within the expanding exchange circuits of the domestic economy. Without foreign trade, to be sure, the Japanese economy would have borne little resemblance to what it had now become. But its vital significance lay in the strategic manner in which it tied into these circuits, and nourished them with overseas resources, rather than in its bulk share of the web of activities which now constituted the livelihood of 70 million Japanese.

Transport and the Growth of the Market

No single industry played a more essential role than transportation in Japan's economic growth. Specialization by regions and occupations within the islands, the exchange of goods overseas, and the whole expansion in the scale and productivity of the economy depended upon improved access to wider markets and mobility of both goods and people.

In Tokugawa days not only was foreign trade almost wholly inter-

¹⁷ A rough estimate based on a comparison of the gross value of manufacturing production with exports of manufactured goods, after eliminating the double counting of commodity values in successive stages of manufacture. See *The Economic Development of Japan*, chap. vii.

dicted, but internal commerce was cramped and confined by bad transport, along with official barriers and restrictions. Land transportation was mainly by bearer, horse, or oxcart. Horses were mainly for the nobility and the military; cart traffic was limited; even the wheelbarrow was little used. There were few highways worthy of the name, and they were used chiefly for travel and posts.¹⁸ Bulk cargoes like the feudal rice taxes moved principally by sea. But junk navigation was slow and uncertain, the construction of large vessels being forbidden by the Shogunate. In the 1860's it still took 30 to 40 days to go from Tokyo to Kyushu, a distance of 600 miles. And on the best highways, even as late as 1884, the cost of transport doubled the price of rice in 20 miles.

In Japan, as in eighteenth-century Europe, the industrial revolution brought with it a revolution in transport and communications. One of the first acts of the Meiji reformers was to build a railway from Tokyo to Yokohama. The rapid extension of the rail net until it spread through the home islands was a prime objective of the authorities. Like Moltke, they sought it for strategic as well as economic reasons. In contrast to Western countries whose early railroads were often built in short stretches by local interests, Japan gained the economies of a national system almost at the outset. No less important for these sea-girt islands was the building of a merchant marine, first by the purchase of steam tonnage abroad and then by state-encouraged construction at home.

Better transport of both types, together with the creation of a modern system of postal, telephone, and telegraph communications, played a crucial part in unifying the national market and linking it with the outside world. First it facilitated a geographic extension of the market, internal and external, by lowering the cost of movement. Then it sustained the further development of the market as rising productivity widened the opportunities for profitable exchange. In one generation, from 1888 to 1913, freight traffic on Japan's spreading railways rose from 848,000 tons to 40.6 million tons. For water-borne commerce no comparable figures were collected at this time. While its growth was less spectacular, the total tonnage of all merchant vessels over 5 tons increased from 494,000 gross tons to 2.4 million tons. Moreover, 60 per cent of the total in the earlier year represented slow sailing junks of traditional design, averaging only 17 tons apiece. In 1913, 60 per cent was comprised of steamships averaging 500 tons.¹⁹

¹⁸ Robert B. Hall, "Tokaido: Road and Region," *Geographical Review*, XXVII (July, 1937), 353-377.

¹⁹ While laying emphasis on the importance of improved transport, one should not overstress this factor. The main limitations on the domestic market in Tokugawa Japan, as in the Middle Ages of Europe and in preindustrial Asia today, were social, not geographic. Many handicraft wares produced in ancient Japan could not be marketed in the immediate neighborhood, but only some distance away in Yedo and other distant cities where the wealthy nobility and merchants congregated. Only with the general rise of productivity and purchasing power could Japan

Railways and steamships have become the conspicuous, modern types of transport in modern Japan. Yet it would be misleading to confine attention to them. Back of their expansion lay a pervasive modernization of local traffic by more economical means, including simply the spread of wheeled vehicles. Today the horse-cart and the ricksha may seem archaic. In Meiji Japan their appearance in large numbers was revolutionary. Through the nineteenth century, indeed, the economic gains from railway construction in Japan were overshadowed in their immediate economic importance by the benefits from the local building of narrow, dirt roads, the introduction of the ricksha, and the growing use of carts. A fourfold increase took place from 1877 to 1897 in the number of registered carts pulled by horses, oxen, or men.²⁰ Partly this represents more complete registration for tax purposes; but it must also reflect an extensive growth and improvement in short-haul transportation. Increasing mobility, achieved mainly by simple, even traditional techniques, was of great importance in reducing local price differentials, in moving people to cities in search of new occupations, and in facilitating the growth and diversification of production.²¹

In later years the packhorse and the cart gave way increasingly to the railway, the bicycle, and the truck, just as sailing vessels yielded their supremacy to steam. Similarly, water transport as a whole failed to keep pace with the railway as a carrier of domestic freight. From 1913 to 1927 coastal and interisland shipping increased 50 per cent in cargo tonnage—roughly from 60 to 90 million tons.²² Meanwhile railway freight rose nearly 150 per cent, according to the index of Table V.3. Yet water transport continued to be of great significance in domestic movement of bulk commodities as well as in foreign trade. Probably three out of every four tons of cargo entering Japanese ports still represented coastal and interisland traffic. Taken together, freight movements by rail and ship had approximately doubled since 1913. This may perhaps be taken as a fairly good index of the growth in Japanese commodity production for nonlocal markets during the intervening years. Meanwhile rail passenger traffic increased still more rapidly. On the Imperial Railways it rose

develop a mass market for industrial goods, regardless of transport cost. Even today she lacks a standardized market for many manufactures in wide use, owing to marked consumer preference for individuality in style and design.

²⁰ *Nippon Keizai Tōkei Sōkan*, p. 833.

²¹ Better transport was essential to the growth of urban populations. To cite one simple example: when the vegetable supply of a Japanese city had to be brought in by wheelbarrow, the supply area was confined to a radius of about 12 kms. When carts came into general use in Meiji times the limit was extended to 20 kms. Later, trucks pushed the limit to 40 kms., and, in addition, the growth of long-distance transport and marketing arrangements began to bring in supplies from distant districts (Y. Yagi, "Horizontal and Vertical Differentiations in the Agricultural Production of Japan," *Kyoto University Economic Review*, IX, July, 1934, 41-48).

²² *Nippon Keizai Tōkei Sōkan*, p. 1233. This allows for some traffic with the colonies in the official figures.

from 168 million people in 1913 to 796 million in 1927; and then to 1,344 million in 1938.

One of the most significant accompaniments of Japanese industrialization, then, was this increasing mobility of goods and people, as resources were adapted to new demands and new production techniques. Without it the spectacular growth of cities would have been impossible. Perhaps the point may be clinched by a final comparison of railway traffic in Japan with that in two other countries, both of them continental regions more dependent on land transport than Japan. Rail traffic in 1937 was as great in Japan as in France, a country nearly 50 per cent larger in area. It was four-fifths as great as in India, a country ten times the size of Japan.²³ No single feature of Japan's industrial revolution was more striking than this factor of movement.²⁴

Rise of Manufacturing Industry

In estimating the over-all growth of manufacturing output in prewar Japan, one encounters the difficulty already noted in the case of transportation. For private plants large enough to be classified as factories the data are relatively complete in recent decades. For government-owned factories they are more limited. And for workshop industry, i.e., small establishments employing less than five operatives, production statistics were virtually nonexistent prior to 1939 except in a few branches.

State-owned factories produced largely for the special military requirements of the army and navy and various government bureaus. The chief exception was the Imperial Iron Works, the largest iron and steel concern in Japan. In the infancy of Japanese factory industry, government enterprise was of considerable importance. Many of the initial pilot plants in various industries were established by state initiative. Especially was this true in metallurgy, machinery manufacture, and shipbuilding—all of first-class importance to the military. Even after the government largely withdrew from the field of industrial enterprise in the eighties, army arsenals and navy dockyards continued to foster improved technology in the engineering trades. Quantitatively, however, with the growth of private capitalism state-owned enterprise became relatively unimportant. By 1914 govern-

²³ A rough comparison of all rail traffic, based on actual freight movement plus passenger traffic converted to freight equivalent in proportion to receipts. The figures are as follows for 1937:

	AREA (1,000 SQ. KMS.)	RAIL ACTIVITY (MILLION TON-KMS. FREIGHT EQUIVALENT)
Japan	382	46.9
France	551	46.9
India	4,079	57.7

Railway estimates are from *Energy Resources of the World*, p. 9.

²⁴ The economic and social aspects of mobility—geographic, occupational, and interclass—are not treated here, despite their crucial importance to the process of industrialization. See *The Economic Development of Japan*, chap. ix.

ment plants employed hardly more than 10 per cent of the total number of factory workers. By 1934 their share had dropped to 7.3 per cent. Of the total number, 177,000,²⁵ over half were engaged in turning out machinery, vehicles, and instruments, mainly for the armed forces. Apart from their technological contributions in specialized fields, and the preponderance of the Yawata works in iron and steel manufacture, they had long since ceased to figure appreciably in the civilian economy, except to compete for labor, capital, and materials on a limited scale.²⁶

The myriads of tiny establishments comprising workshop industry, on the other hand, continued to account for a major share of manufacturing activity. Only slowly did they yield to factory competition. In fact, one of the striking aspects of Japanese industrialization has been the strength and staying power of the small industrialist, especially where he has been fitted into a framework of large-scale organization providing him with efficient marketing arrangements and cheaper credit and electric power. As late as 1930 plants of less than five operatives still furnished 30 per cent of the net product of all manufacturing establishments in Japan.²⁷ In terms of gross output, they produced 31 per cent of all Japan's cotton fabrics in 1932; about 60 per cent of her silk fabrics, porcelain, and wooden wares; and 95 per cent of her lacquerware.

Workshop industry was still more important in terms of employment. Table V.4 distributes the labor force in private manufacturing by size of establishment. Some 4,760,000 people gave manufacturing as their principal occupation in this census year (besides 153,000 employed in government plants). Nearly 2,800,000, or over one half, reported themselves as occupied (or last occupied) in establishments of less than five operatives. About 1,240,000 of the latter were independent business men in some sense, 665,000 of them employing no wage or family labor at all. Plants of less than 100 workers furnished not less than 65 per cent of gainful employment and close to half of net output in manufacturing. By comparison such establishments provided only 29 per cent of manufacturing employment in the United States in 1935.

After fifty years of industrialization, therefore, the small plant still played a major role as the technical unit of manufacturing production. The small industrialist likewise remained a significant element in the enterprise system, despite limitations often imposed on his independence by the wholesale merchants, banks, or factories which provided his market and sources of credit. Large plants had a decisive advantage from the beginning in basic metals, electric power, heavy engineering equipment, chemical fertilizers, cotton yarn, sugar, etc. Elsewhere, too, the big establishment made progressive inroads as markets widened, as capital accumu-

²⁵ Ministry of Commerce and Industry, *Kōjō Tōkeihyō*, 1936 (Tokyo, 1938), p. 970.

²⁶ See "The State and Economic Enterprise in Modern Japan, 1868-1938."

²⁷ *National Income of Japan*, pp. 39-53.

TABLE V.4
LABOR FORCE OF PRIVATE MANUFACTURING INDUSTRY IN JAPAN PROPER,
BY SIZE OF ESTABLISHMENT, 1930*

SIZE OF ESTABLISHMENT	NUMBER OF ESTABLISHMENTS	PERSONS ENGAGED (PRINCIPAL OCCUPATION)	
		NUMBER	PER CENT
Independents.....	665,533	665,533	14.0
1-4 operatives.....	512,271	2,106,650	44.3
5-99 operatives.....	59,643	988,465	20.8
100-499 operatives.....	2,178	504,512	10.6
500 or more operatives.....	413	494,761	10.4
Total....	1,240,038		100.00

*The number of establishments of five or more operatives is the factory census figure (Ministry of Commerce and Industry, *Kōjō Tōkeikyō*, 1930, Tokyo, 1932, Table 4). The number of independents (one-man establishments employing neither family nor hired labor) is from the decennial census (Imperial Cabinet, Bureau of Statistics, *Shōwa Gō-nen Kokusei Chōsa Saishu Hōkokusho*, Tokyo, 1934, Table 41). The number of establishments of 1-4 operatives is the census total of employers, minus 40,000 estimated to own plants employing 5 or more operatives. (The remainder of the factories were owned by joint-stock companies and partnerships not defined as employers by the Census.) The actual number of plants of 1-4 operatives was somewhat higher, as some employers owned more than one.

The number of persons occupied in the different categories is estimated as follows: (1) for plants of 100 or more operatives, factory employment at the end of the year plus unemployed workers estimated by the census as 3.3 per cent for all industry; (2) for plants of 5-99 operatives, the same as above, with the addition of 40,000 entrepreneurs operating factories assumed to be in this class; (3) for plants of 1-4 operatives, a residual figure derived by subtracting the other classes (and government factories) from the census total for all persons gainfully occupied in manufacturing (industrial classification, Table 47). Excluded throughout are persons gainfully occupied in construction (962,722) and in 152 government factories (153,348).

This method of estimation tends to exaggerate the importance of plants of less than 5 operatives, especially since so many people in this category worked only part-time. The census figures may be taken as broadly representative of the size and distribution of the labor force (in terms of chief occupation), but must be discounted substantially as a measure of actual employment.

lated, and as the Japanese gained experience in the technical and managerial skills of large-scale industrial organization. Yet the workshop and small factory displayed marked powers of survival. This was true not merely in neighborhood trades but in serving far-flung export markets, where they were co-ordinated through overhead structures of finance and marketing. Often they flourished alongside big plants within a single industry, such as cotton textiles and electrical goods, developing intricate patterns of specialization and complementarity. They continued to produce a large share of Japan's woven and knit goods, enamelware, bicycle parts, electric bulbs, brushes, and miscellaneous manufactures of wood, straw, celluloid, rubber, and leather. Through a wide range of consumer goods they remained well suited to Japan's complement of capital resources and skills, and to the special emphasis on individuality and variety of design which characterized the Japanese market.

Technologically, this whole amorphous mass of small industries which crowded together in Japanese cities and spread through the countryside furnished a strategic bridge between the old and the new. With important exceptions, like the basic industries mentioned above, they were the medium through which took place the shift to more modern forms of capitalistic, machine industry. Here the break with the past was less

abrupt. Yet an avenue was provided to the organizational forms and work habits which were increasingly to dominate the future. In this atomistic, intensely competitive, often exploitive sector of economic life occurred much of the most productive capital formation and technical adaptation to science and machinery. The essential role of the basic, large-scale industries, and the spectacular operations of the great combines which dominated them, should not obscure the fact that small industry actually contributed a good deal of the substance and momentum of Japan's industrial growth, especially in the earlier decades.²⁸

TABLE V.5
GROWTH OF FACTORY INDUSTRY AND OUTPUT OF SELECTED COMMODITIES
IN JAPAN PROPER, 1884-1914*

	NUMBER OF FACTORIES†	FACTORY OPERA- TIVES† (1,000's)	FACTORY CONSUMP- TION OF COAL (1,000's of metric tons)	PRODUC- TION OF RAW SILK (1,000's of pounds)	PRODUC- TION OF COTTON YARN (1,000's of 400-lb. bales)	NET SUP- PLY OF PIG IRON‡ (1,000's of metric tons)
1884.....	—	—	147*	5,947	13	18
1889.....	—	—	367	7,167	67	24
1894.....	5,985	481	1,093	11,505	292	55
1899.....	6,699	423	2,615	15,835	757	48
1904.....	9,324	526	3,705	16,511	695	133
1909.....	15,426	692	4,319	23,998	1,025	283
1914.....	17,062	854	8,359	31,056	1,666	474

*Data on factories and factory operatives from Imperial Cabinet, Bureau of Statistics, *Rōdo Tōkei Yōran*, 1930 (Tokyo, 1930), p. 15, and *Statistical Reports of the Department of Agriculture and Commerce* (annual). Other series from Asahi Shimbun-sha, *Nippon Keizai Tōkei Nōkan* (Tokyo, 1930), as follows: raw silk, p. 1205; cotton yarn, p. 1213; pig iron, p. 1220; coal, p. 1222.

†Before 1909 includes only plants employing 10 or more factory operatives; thereafter, plants employing 10 or more operatives and "laborers" (cooks, guards, etc.). Government factories appear to be excluded from the above figures. In 1914 there were 102 such plants employing 137,000 operatives.

‡Production plus imports minus export.

‡1886.

The foundations of modern Japanese industry were laid in the eighties and nineties—the first quarter-century of the Meiji era. Thereafter expansion was rapid and continuous. Already by 1914 nearly a million persons—mostly women and girls—were employed in factories of ten or more workers. Perhaps another 1.5 million or more were occupied in smaller workshops and home industries. Table V.5 gives several indica-

²⁸ Further discussion of this important aspect of Japanese industrialization will be found in *The Economic Development of Japan*, chaps. iii and ix. Several excellent, more detailed studies have appeared in English, especially the following: John E. Orchard, *Japan's Economic Position* (New York, 1930); Teijiro Uyeda and associates, *The Small Industries of Japan* (New York, 1938); and G. C. Allen's chapters in E. B. Schumpeter, ed., *The Industrialization of Japan and Manchukuo, 1930-1940* (New York, 1940).

tions of this growth: (1) the increase in private factories of ten or more operatives (the only category for which statistics were collected at the time); (2) the growth of the silk and cotton industries which pioneered Japan's industrial advance; and (3) the mechanization and expansion of factory production in general as reflected in the rapid rise in consumption of coal and pig iron for industrial purposes.

More broadly, the growth of manufacturing activity is portrayed in Table V.6. Here is summarized the best available index of Japanese manufacturing production for the years 1895 to 1929, the index constructed at Nagoya Commercial College. This is extended through 1938 by splicing on the index prepared since the war at General Headquarters, Supreme Commander for the Allied Powers, Tokyo. The Nagoya index is broadly based on a number of industries. It appears to represent in some degree, though less adequately, the growing production of workshop industry and government plants as well as private factories.

Table V.6 almost certainly overstates the growth of manufacturing

TABLE V.6
PHYSICAL VOLUME OF MANUFACTURING PRODUCTION IN
JAPAN PROPER, 1895-1938*
(INDICES, 1910-1914=100)

	TEX- TILES	METALS AND MACHIN- ERY	CHEMI- CALS AND CE- RAMICS	WOOD PROD- UCTS	FOOD PROD- UCTS	ELEC- TRICITY AND GAS	OTHER	ALL MANU- FACTUR- ING
1895-99 . . .	41	25	—	—	80	—	49	(37)
1900-1904 . .	50	33	—	56	88	10	90	(48)
1905-9	70	61	53	91	85	27	126	69
1910-14 . . .	100	100	100	100	100	100	100	100
1915-19 . . .	152	162	186	142	123	198	248	160
1920-24 . . .	185	244	252	441	170	356	190	217
1925-29 . . .	270	355	453	570	193	653	260	313
1930-34† . .	352	410	643	601	186	1,002	—	377
1935-38† . .	416	920	1,225	1,018	190	1,517	—	600

*For the years 1895-1929, production indices of the Bureau of Industrial Research, Nagoya Commercial College, published in *Hompō Seisan Shiryō Shisū Sōran*, 1894-1931 (Nagoya, 1933), 1895-1918, Series I; 1919-29, Series II (p. 41). Here the Nagoya series are presented with 1910-14 as 100, and projected through 1930-38 with the aid of the industrial production index prepared at GHQ, Supreme Commander for the Allied Powers, Tokyo. (See below.)

For a description and criticism of the Nagoya index, see *The Economic Development of Japan*, Table 8. Briefly, it is a weighted geometric average of production series numbering 20 in 1896, 41 or more in 1905 and thereafter, and 51 from 1919 on. The individual production relatives in each subgroup are combined with weights representing gross value of production in 1926-28. Included are all items having an annual gross value of over 10 million yen at this time. The aggregate index combines the subgroups with weights based on estimated wage payments in each group during 1927. The index represents more than factory industry alone, though workshop output is probably underrepresented. As the latter grew more slowly, the index is biased upwards as a measure of total manufacturing output. This upward bias is reinforced by late-period weights, and by more complete reporting of output in the later years. On the other hand, the resulting effects on the aggregate index are offset in some degree by the use of wage-payment weights which give undue influence to industries which generally grew more slowly. Also, no account is taken of qualitative improvements in output. The index is the best available prior to 1930, but it certainly exaggerates the growth in most industries before 1905, and to a lesser extent thereafter.

†Linked with the Nagoya series in 1930-31, to give a projection through 1930-38. I have used the indices of industrial production prepared by the Economic and Scientific Section, GHQ, Supreme Commander for the Allied Powers, Tokyo (Bank of Japan, *Economic Statistics of Japan*, 1949, Tokyo, 1949, p. 231). To secure indices comparable with the Nagoya classes, pairs of SCAP series are combined here with weights as follows: chemicals, 13.4, and ceramics, 3.5; ferrous metals, 13.0, and machinery, 18.6. Also the "all manufacturing" index given here combines the SCAP series for manufacturing and for public utilities, with weights of 74.0 and 17.4 respectively.

production in the aggregate. Especially is this true before 1905, and to a lesser extent from 1905 to 1929. It must therefore be interpreted with caution. The farther back one goes, the less abundant and reliable are Japanese production statistics; the more the likelihood that a good deal of home and workshop output was omitted, thus exaggerating the subsequent increase; the less satisfactory the methods used to combine the various output series in the over-all index. Moreover, no simple measure, however well constructed, can give meaningful expression to the divergent rates of growth and the extensive changes in the character and quality of goods produced in the scores of industries making up the whole complex of Japanese manufacturing.

Despite these reservations one does find here significant evidence of the rise of manufacturing output during the late Meiji decades spanning the wars with China and Russia. Even if the Nagoya index is discounted, it appears that industrial production (excluding mining and construction) at least doubled in the twenty years after 1893. Not reflected in any such quantitative measure, of course, is the marked improvement in the quality of many Japanese manufactures during this period.

After 1905 the trend of aggregate production can be judged with somewhat more assurance. A fairly steady rise takes place over the next thirty years. The index itself follows an almost straight line of geometric progression to 1938. Its upward and downward swings around the central tendency are surprisingly small in view of the pronounced booms and depressions which characterized these years. From the turn of the century the index advances for four decades at an average annual rate of almost 7.5 per cent.

Very likely the actual growth of manufacturing output was not this rapid. Yet if sustained at anything over 5 per cent a year during this long period, the achievement is still impressive. It is equaled in the annals of few important industrial nations during this period. It is well above the rate of expansion in world manufacturing as a whole, as estimated by the League of Nations.²⁹ The latter's index of world manufacturing output rises 3.5 per cent a year from 1876-80 to 1935-38. For the last thirty years the rate is only 2.8 per cent annually. By comparison, the Japanese advance was probably at least twice as rapid.

A comparison of the curves for a number of countries shows further that Japan's relative gain upon the other industrial nations was achieved mainly in two periods: (1) the years of World War I, when she seized the opportunity afforded by her virtual noncombatant status to forge ahead commercially and industrially; and (2) the world depression of 1931-35, when her industry again spurred ahead under the impetus of monetary expansion and exchange depreciation. For most other leading countries these two periods were years of retarded growth or actual decline.

²⁹ League of Nations, *Industrialization and Foreign Trade* (Geneva, 1945), Annex Tables I and II.

The League of Nations study cited above also presents an interesting estimate of the distribution of the world's manufacturing production among various countries (pp. 127-129). The criterion employed is the net product value added in the process of manufacture during the years 1925-29. The United States, for example, is given a weight of 42.5 per cent; Germany, 11.5 per cent; and the United Kingdom, 9.5 per cent. Japan is far below these levels. Her output is estimated at only 2.5 per cent of the world's total. For reasons which we shall not enter upon here, this figure is probably too low.³⁰ Even at this level, however, the League statisticians conclude that in 1926-29 Japan accounted for one fourth of all the manufacturing production of the "economically young areas"—Latin America, Oceania, Southeast Europe, Africa, and Asia (excluding the U.S.S.R.). The only other Asiatic nation which had undergone appreciable industrialization at this time was India. India's progress under British rule, however, lagged far behind that of Japan during the first three decades of the twentieth century. At the end of the period she was no match either in the scale or technical maturity of her factory industry.

Any general measure of manufacturing growth is apt to conceal wide variations among individual industries. This is evident in Table V.6, where the production record of six major components of Japanese industry is depicted. The differences among the series are what one might expect. The steepest curves of development are found among the producer-goods industries as a group. These are the industries which were new—or nonexistent—in 1900. Most rapid is the advance in gas and electric power, the modern energy sources which were basic to industrial progress. Next come the metallurgical and chemical industries. Here government encouragement and armament expenditure fostered rapid growth, along with the expanding needs of transport, agriculture, and industry in general. Particularly noteworthy is the upward surge of the heavy industries in the years 1930-38, under the stimulus of capital construction and armament.

On the other hand, the older consumer industries advance more slowly. The processing of food, of clothing materials, and of wood, bamboo, and straw manufactures was already comparatively well developed at the turn of the century. These industrial pursuits, at a more primitive level of technology, had long served the basic necessities of the people. Their expansion in modern times is therefore less spectacular. Even so, the growth of the textile industries in serving the domestic and foreign market is nearly as rapid as the general average for all industry. Textiles, along

³⁰ To compare the net value of industrial production among countries with differing price levels is a complicated matter. Elsewhere I have attempted a rough comparison of *factory* production in Japan with that of the United States, United Kingdom, and Germany during 1934-37. This yields ratios not very dissimilar from those given above. However, if *total* manufacturing production were compared, including the output of plants with less than five operatives, the Japanese figure would probably be increased by 40 per cent or more.

with metals and machinery, form the two largest components of Japanese manufacturing. Together they are given a weight of as much as 70 per cent in the Nagoya index, and over 50 per cent in the SCAP Headquarters index for the years after 1930. Naturally, therefore, the aggregate index follows closely their upward curves, rising more rapidly than the former and more slowly than the latter.

This industrial expansion radically altered the structural balance of the Japanese economy. Manufacturing and construction furnished 30 per cent or more of the national income annually after 1930. They likewise occupied over 20 per cent of the labor force (Table V.1). Within the country sweeping occupational and geographic shifts were required to effectuate this change. By 1935, 46 per cent of the people lived in towns and cities over 10,000, and 25 per cent in cities over 100,000. Externally, the national economy had become heavily dependent on overseas food and industrial materials. During the interwar years gross imports amounted to above 20 per cent of national income, 75 per cent of them retained for home utilization and the remainder reprocessed for export or offset by similar exports.³¹ Such structural changes were the condition of industrial progress, and its necessary consequence.

The Factory System

The cardinal feature of industrial expansion was the introduction of the factory system. The techniques of machine production and large-scale management advanced hand in hand with the widening of market opportunities at home and abroad. Each reinforced the other, and each was dependent in turn on associated changes in political, legal, and financial institutions. The new freedom and unification of the national market, the ardent encouragement of armament and supporting industries by the state, the expanding circuits of international trade, the spread of literacy and technical education—all worked to stimulate the technical innovations and capital investment which built a new structure of modern industry. In all this Japan did no more than move at an accelerated rate along the path already pioneered in the West. If the factory system was created in Japan within fifty years, whereas it had taken two centuries to evolve in Britain, the chief difference was that these techniques now lay ready at hand for nations who wanted them and could provide a suitable institutional framework. As rapidly as they could be assimilated they afforded a decisive advantage over traditional modes of production in major branches of manufacturing, mining, and transport.

Equally evident were the resistances and lags which everywhere in varying degrees have retarded the spread of factory enterprise. The persistence of masses of small industries relying largely on low-paid family

³¹ For a detailed analysis of these trading relationships in the thirties, see the U. S. State Department's excellent study of *The Place of Foreign Trade in the Japanese Economy* (Washington, 1946).

TABLE V.7
GROWTH OF FACTORY INDUSTRY IN JAPAN PROPER, 1909-38*

	NUMBER OF FACTORIES		MACHINERY CAPACITY† (HORSEPOWER IN 1,000's)		NUMBER OF WORKERS (1,000's)	GROSS VALUE OF PRODUCTION‡ (MILLION YEN)
	Total	Equipped with power machinery	Prime movers	Electric motors		
1909.....	32,390	9,155	—	—	1,012	781
1914.....	31,859	14,578	537	279	1,187	1,371
1919.....	44,087	26,947	719	992	2,025	6,738
1924.....	48,394	37,141	877	1,440	1,977	6,625
1929.....	60,275	48,555	695	2,600*	2,384	7,994
1934.....	80,880	68,806	972	3,730	2,580	9,758
1938.....	113,205	98,723	1,461§	6,290§	3,718§	20,101

*Except as detailed in footnotes † and ‡ these are year-end figures covering all private and publicly owned factories other than a few local-government enterprises. Before 1929 private factories are defined as manufacturing establishments (including gas and electricity plants) normally employing five or more "operatives" (*shokkō*); thereafter establishments equipped to employ five or more. Much confusion is found in tables of Japanese factory statistics, owing to the inadequate or misleading descriptions often given in official publications. After a good deal of crosschecking, I believe the above series are reasonably consistent and inclusive. The data have come mainly from the following sources: Ministry (Department) of Commerce and Industry, *Kōjō Tōkeihyō*, 1930-36 and *The Statistics of the Department of Commerce and Industry*, 1924-28; Ministry of Finance, *Statistical Year-Book of Finance and Economy of Japan*, 1948; Imperial Cabinet, Bureau of Statistics, *Nippon Teikoku Tōkei Nenkan*, *passim*; Supreme Commander for the Allied Powers, GHQ, *Number of Establishments, Employment and Value of Products in Manufacturing Industries in Japan, 1928-1942* (Tokyo, 1947); *Asahi Shimbun-sha*, *Nippon Keizai Tōkei Sōkan* (Tokyo, 1930); and Yasuji Koide, "Hōmyō Sangyō Kōō no Hendō ni Kansuru Shiryō," *Nagoya Keizai Tōkei Geppō*, VIII (Oct., 1936), 1-65.

†Capacity of prime movers and electric motors installed in factories as defined in n. *, except that the gas and electric industries are excluded here.

‡Private factories only. Except in 1914 the estimated value of gas and electricity production is added to official factory totals, which exclude this industrial group except for by-products of gas plants. For 1919-34 estimates are from Koide, *op. cit.*; for 1938 gas output is valued at .73 sen per cubic meter and electricity at 1.9 sen per kilowatt hour. Gross production values contain a good deal of duplication of products, since intermediate as well as finished products are reported.

*An estimate based on the number of electric motors and on electricity consumption in 1929 compared with the years immediately preceding and following. The official figure is actually 4,673,000 horsepower in 1929, but this is incredible. It is more than double the figures for 1927 and 1928, and 50 per cent above 1932 and 1933. In effect, I have merely smoothed out the trend through the years 1924-34, but there may actually have been a change in census methods falsifying any comparison of electric motors before and after 1929.

§1937.

labor and primitive techniques has already been emphasized. Workers entered factory employment with reluctance, despite the relentless pressure of population in the countryside. To do so was to expose themselves to all the raw evils of unregulated industrialism and slum living, or to the irksome discipline of the factory-dormitory system. A high turnover of labor characterized Japanese industry long after it could have been curbed by factory legislation and more enlightened wage and employment policies on the part of employers. Capital remained scarce, especially in small-scale industry, and entrepreneurship often timid. Even in large-scale factory enterprise these factors were only partially mitigated by the leadership and financial incentives provided by the government. If state policy accelerated the growth of large-scale industry under the aegis of the zaibatsu, it also warped this development towards military ends, meanwhile doing little to narrow the technological gulf which separated modern business enterprise from the world of the small industrialist and trader. These brief observations will at least suggest the complex circumstances which lay

back of the curves of growth with which this paper is mainly concerned.

Table V.7 records the bare statistical outlines of Japanese factory expansion after 1909.

The growth of manufacturing production in plants of five or more operatives—at least a sevenfold increase from 1909 to 1938, judging by the index in Table V.6—took place through several related developments. These included: (1) a 250-per-cent increase in the number of factories and factory workers, with little change in the average number of workers per plant,³² (2) a rise of over 100 per cent in output per plant (deflated for price changes), resulting from greater mechanization and other improvements; and (3) a corresponding advance in output per worker. Other essential elements in the process are not recorded here—e.g., the growth of markets. In passing, it might be remarked that the bulk of Japan's industrial production continued to be consumed at home. Yet the share of net manufacturing output marketed in foreign countries and colonies approached as much as one-third in the peak decade 1928-37. Over one-third of these industrial exports in turn (by gross value) were still raw silk and cotton fabrics, of which the export-production ratios ran as high as 75 per cent and 55 per cent respectively.³³

The gain in labor efficiency cannot be measured accurately in the absence of more accurate data on production and man-hours of employment. Some indication of the change is given, however, by comparing the index of total manufacturing output in Table V.6 with an index of year-end factory employment as defined in Table V.7. The results are as follows (1910-14=100):³⁴

³² It is surprising to find so little growth in the average number of workers per plant, considering the expansion of factory output over this period. The change in the distribution of employment between small, medium, and large factories was relatively slight.

PERCENTAGE OF

SIZE OF PLANT	PRIVATE FACTORIES		FACTORY OPERATIVES	
	1909	1934	1909	1934
5-9 operatives	52.1	56.5	13.5	11.8
10-99 operatives	44.3	39.7	43.0	36.9
100 or more operatives	3.6	3.8	43.5	51.3

"Hompō Sangyō Kōzō no Hendō ni Kansuru Shiryō," pp. 4, 13.

In 1934, in addition to the above, there were over a million workshops employing less than five operatives. These tiny establishments still employed almost as many persons in manufacturing activity, at least part-time, as all factories put together.

³³ *The Economic Development of Japan*, chap. vii.

³⁴ Prior to 1920 employment in private factories of five or more operatives was reported only for 1909, 1914, and 1919. From these figures I have made estimates for 1910-14 and 1915-19 by reference to the employment trend in establishments of ten or more operatives during the intervening years. The indices of employment and output are not exactly comparable, for the latter is not wholly confined to

	NUMBER OF FACTORY WORKERS	MANUFACTURING OUTPUT	OUTPUT PER WORKER
1910-14	100	100	100
1915-19	150	160	107
1920-24	190	217	124
1925-29	190	313	165
1930-34	196	377	192
1935-38	228	600	263

Employment in factory industry, both public and private, more than doubled over this twenty-five-year period. From 1.1 million wage and salaried workers of all types in 1910-14 it grew to 2.6 million in 1935-38. Meanwhile the volume of production in these establishments of five or more operatives certainly increased no *less* rapidly than in manufacturing industry as a whole, including small workshops. The indices suggest, accordingly, that the gain in per-capita output was something over 150 per cent.

So far as physical outputs can be compared over this long span of time, one concludes that on the average a factory worker in Japan produced annually well over twice as much at the end of the period as at the beginning. Regular hours of work were reduced 10 per cent or more during the interval, so that production per man-hour may have risen somewhat more rapidly. However, too little is known about actual hours of work, including part-time and overtime labor, to be certain at this point.³⁵

As labor efficiency increased, the gain in product per worker seems to have been widely shared. Some of it accrued to the worker himself in the form of higher wages; some of it went to the capitalist as interest and profits on the growing amounts of capital invested per worker; and a good deal was passed on to the consumer, either at home or abroad, in the form of reduced prices (in relation to money income) or better quality. From evidence examined below, it appears that the real daily wage of the average factory wage-earner advanced by about two-thirds from 1914 to 1937. To this extent he himself shared in the benefits.

This advance in the productivity of factory labor is not surprising in view of the improvements currently taking place in industrial organization and methods. Most important, the ratio between workers and capital equipment was becoming steadily more favorable. The actual change

factory production, but includes certain workshop industries. Moreover, the employment figures include all persons on the payroll on Dec. 31 of each year, while the production index purports to measure activity throughout the year. The latter discrepancy, however, is minimized by the use of five-year averages.

³⁵ By way of comparison, output per manufacturing wage earner in the United States increased 55 per cent from 1914 to 1937, and output per wage-earner-hour 109 per cent. (Solomon Fabricant, *The Relation Between Factory Employment and Output Since 1899*, New York, National Bureau of Economic Research, 1941, p. 37.) This represents, of course, a far more careful and accurate measurement than the figures for Japan given above.

here is difficult to measure, for industrial capital takes many different forms not readily summarized and compared. One useful indicator, however, is the capacity of industrial establishments to harness inanimate energy to the driving of machinery. As an index of capital this rests on the hypothesis that motive capacity, expressed in horsepower or kilowatts, measures roughly the amount of machinery and equipment in use, while the amount of equipment in turn is associated with building space and other forms of industrial capital.³⁶

Table V.7 presents two series of figures testifying to the mechanization of industry in prewar Japan. One is the horsepower of prime movers installed in all factories, private and public, except those establishments classified as gas and electricity undertakings. (The latter are excluded since they supplied power not only for industrial use but also for household lighting, tramways, etc.) Prime movers are machines like steam engines and turbines for transforming natural sources of energy—falling water, wind, and fuel of all sorts—into mechanical energy. This first series of figures tells very little, however, for Japanese factories at this time were securing more and more of their power in the form of electric energy generated in public-utility plants. The second series, the horsepower of electric motors installed in factories, is more significant. It soars from 279,000 horsepower in 1914 to 6,290,000 horsepower in 1937—more than a twentyfold increase.

Unfortunately, a single total for motive capacity applied to factory industry cannot be secured merely by adding these two series together, although this is done in *Kōjō Tōkurihyō* and other official Japanese publications. The opinion may be ventured, nevertheless, that the total net capacity of power equipment installed in public and private factories (other than gas and electricity undertakings) to operate machinery increased something like 400-500 per cent from 1914 to 1935-38. Meanwhile the number of workers tripled. Per worker, the amount of power machinery perhaps doubled. In 1936 the net capacity of prime movers and electric motors reckoned in this fashion was a little over 5 million horsepower, or 1.69 per worker.³⁷ This per-capita figure, incidentally, is about one-third of the corresponding figure for American manufacturing in 1939, which was 4.8 horsepower per worker.³⁸

³⁶ Actually the relationship between motive power and total industrial capital is only a loose one, particularly where power machinery is replacing hand machinery, or where there is a rapid growth in chemical and metal-working industries using large amounts of equipment for heating, cooling, separation, electrolysis, etc. Also, the efficiency of power machinery is apt to vary in relation to its energy input, and its amount is not necessarily correlated very closely with building space, or with transport equipment upon which a factory depends but which is outside the plant. See "Motive Power in European Industry," United Nations, *Economic Bulletin for Europe*, III (First Quarter, 1951), 24-25.

³⁷ For details of this estimate, and a fuller account of the whole subject, see *The Economic Development of Japan*, pp. 120 ff.

³⁸ "Motive Power in European Industry," p. 27.

The motive power actually required to operate factory machinery in 1936 was somewhat less than 5 million horsepower, as electric motors do not ordinarily need prime movers of equivalent rated capacity to provide their power, even allowing for energy lost in transmission. On the other hand, a good deal of motive capacity was now employed in public utilities and factories to generate electricity for factory heat and light, electrolysis, chemical reaction, and other industrial purposes besides operating machinery. If this is reckoned in by allocating public-utility generating capacity to factory use on the basis of the share of electric power supply consumed in factory industry, there may well have been an increase of 150 per cent or more per capita in the total horsepower of prime movers installed and allocated in this sense for all factory requirements. Unless I have misinterpreted the official statistics, this figure also came to nearly 5 million horsepower in 1936, or 1.6 per worker.

The progress of mechanization after 1914 was continuous, though somewhat erratic. The boom years of World War I brought a rapid expansion of industrial production and exports, as Japan moved into markets suddenly vacated by her European competitors. Her industries were still largely dependent on foreign machinery, however. This was difficult to procure under conditions of war. The supply of turbines, for example, was virtually cut off. Accordingly, manufacturing output was expanded quite as much by simply adding to the labor force as by mechanization. In fact, production per worker appears to have risen very little from 1914 to 1919.

The rationalization movement of the twenties fostered a marked increase in power-driven machinery and other equipment utilizing Japan's growing supplies of electric power. Labor-saving improvements were encouraged by the failure of wages to decline from wartime peaks in proportion to prices, and by the rise in labor standards and labor efficiency. The dwindling profit margins of the post-1929 depression added a further incentive. Meanwhile the big electrical utilities expanded rapidly, with the aid of American capital and technical assistance. At the end of 1919 the generating capacity of all public and private plants in Japan proper was only 1,133,243 kw.; in 1929 it was 4,193,623 kw.; and in 1934, 5,491,947 kw. With the industrial demands of the thirties it grew to 7,166,495 kw. at the end of 1937. Hydro plants accounted for 3,959,402 kw., or 55 per cent; thermal plants for the remainder.⁸⁹

At the close of this interwar period nine out of ten Japanese homes were wired for electric lighting, at least on a modest scale. Indeed, all of Japan's 11,500 towns and villages were said to have lighting facilities in some degree, except for 199 small hamlets in remote corners of the nation. Yet two-thirds or more of the country's power supply actually went into mining and manufacturing. Industrial consumption of electricity

⁸⁹ *Nippōn Teikoku Tōkei Nenkan*, *passim*.

tripled from 1926 to 1936. The chemical industry was the largest consumer, followed by metallurgy, mining, and textiles.

The electrification of industry thus enabled the Japanese to capitalize handsomely on their abundant natural sources of energy in the form of falling water and coal. It also facilitated a dispersal of manufacturing in small plants scattered through the towns and countryside. The result was to make it a good deal easier, both socially and economically, to bring into industrial employment Japan's great reservoir of cheap farm labor, and to hasten the modernization of techniques outside the main industrial centers.

If the productivity of Japanese factory labor more than doubled from 1910-14 to 1935-38, the chief instrument of the advance was this corresponding increase in power machinery and the installations required to house and operate it. The growth and modernization of capital equipment, reflected in the above statistics of motive power, brought a revolutionary advance in energy harnessed per worker, and made possible a far larger scale of production. In addition to mechanization, and the use of electric power in the chemical and metalworking industries for electrolysis, heat treatment, etc., other related changes also contributed to the growing effectiveness of labor. Within industry itself both management and workers gained in experience and personal efficiency. Materials like cocoon silk, staple cotton, and raw steel were improved in quality and uniformity. Such auxiliary services as shipping and marketing were rationalized to keep pace with the requirements of large-scale production. In short, manufacturing progress was dependent on progress in other sectors as well.

Despite these advances Japan remained far behind the leading manufacturing nations of the West in the scale and efficiency of her industry. This was true of most of the big factory trades, and still more of the tiny workshops which still bulked so large in her industrial economy. In almost every sphere the more productive use of manpower was held back by its very abundance, and by the comparative shortage of capital and advanced mechanical and organizing skills. The average industrial worker in 1936 was now aided with mechanical energy equivalent to 67 man-years of labor, or six tons of coal. Yet this was still only half the figure for the United Kingdom. It was less than one-third of that for the United States. Even in factory industry net product per worker, converted to British prices, was only about £100-125 in 1934. Though the average factory operative put in sixty-two hours a week, he produced hardly half the output of a British worker, and a quarter to a fifth of the corresponding output in the United States. Some industries lagged as far behind as coal mining, where physical output per man-hour was only one-ninth as great as the American figure during 1925-29. Even the most advanced industries like the big spinning-weaving mills still employed at least twice as many workers as American mills producing a similar output.⁴⁰

⁴⁰ These comparisons are from *The Economic Development of Japan*, chap. iv.

Three circumstances perpetuated the relatively low effectiveness of industrial labor in Japan, despite the advances achieved. Technologically large sectors of industry had left far behind the world of the hand-forge and the wooden boatyard; yet, by Western standards, equipment and skills for large-scale, mechanized production were still woefully deficient. Second, Japanese manufacturing was also more largely concentrated upon products like textile fabrics which, for technical reasons, require relatively large amounts of labor and therefore yield only low output per worker. Third, it was far smaller in aggregate scale and geared to a less standardized market—both conditions restricting economies of mass production. In the mid-thirties Japan still produced hardly 10 per cent as much in manufactured goods as the United States. She also remained heavily dependent on the latter for industrial equipment of advanced and specialized types, especially metalworking and machinebuilding equipment. These limitations, added to her dependence on overseas materials, were to prove of decisive significance in the war which followed.

For a true perspective, in short, one must appreciate the limitations as well as the achievements of the Japanese record. The former do not detract from the latter; they only underline the primitive state of the preindustrial economy which furnished the starting point. With all the qualifications that must be made, the changes which took place from 1868 to 1938 in the organization of wealth-producing activities were more profound than those of the previous millennium.

Other Service Occupations

The remaining field of economic activity comprises the service industries, other than transportation. Here are found a wide range of miscellaneous occupations rendering all sorts of services which have little in common save that their product is nonmaterial. In Japan, as in other developing countries, the commodity-handling services, e.g., retail and wholesale trade, have become increasingly detached from commodity production itself. They afforded independent employment and income to a substantial share of the working population. Of growing importance, too, have been other service industries like banking, the private professions, and commercial recreation. Not least in significance, of course, have been the activities of national and local government agencies.

Many of the service trades are apt to be slighted in accounts of Japan's industrialization. For one thing, they do not attract attention by entering into international competition, being largely nonexportable. Also, a large share of them are traditional trades still carried on with little modernization of skills and equipment. Yet to pass over them would be to ignore a segment of the Japanese economy which occupied close to 30 per cent of the civilian labor force in the prewar decade and produced 40-45 per cent of the country's income as estimated in the national-income accounts. (Table V.1 gives these shares for 1930.)⁴¹

⁴¹ See *The Economic Development of Japan*, chap. ix.

Among these "tertiary" industries are a number which were directly essential to the growth of commodity production and distribution. Here, besides various kinds of land and water transportation, one would place most of the merchandising and financial world, as well as professions like engineering, law, and accounting. Others as well reflected the increasing urbanization of living conditions and the decline of the self-sufficient family economy; also the rise in living standards which made for a more than proportionate growth of expenditure on amenities beyond the basic needs of food, clothing, and shelter. These trends created a growing demand for teachers and doctors. They shifted people increasingly into rented dwellings. They provided new commercial opportunities for theaters, restaurants, barbershops, artists, and geisha. They enlarged both the requirement and the means for personal travel and domestic service. Finally, the responsibilities of the state grew steadily in scale and complexity, as industrialism advanced and with it Japan's ambitions as a world power.

Unfortunately it is impossible to provide any summary measure of long-term growth which will cover adequately this miscellaneous field of productive effort. For many individual occupations evidence is not difficult to assemble. One can find it in banking and insurance statistics; in the spread of educational institutions; in government payrolls; in the income-tax returns of various trades and professions; in the municipal statistics of warehousing, retailing, and the other urban services of cities like Tokyo or Osaka. And, of course, there are data on railways, shipping and communications, some of which were cited earlier. Yet for most of these occupations, even estimates of employment are quite unreliable before 1920. Any measure of income or product is still more speculative.

An indication of the general tendency to growth may be provided by certain historical estimates of income produced in the service industries, prepared by Yuzo Yamada. For the services as a group they are summarized below in Table V.9. They show total net product rising from 1,421 million yen in 1883-87 (at 1928-32 prices) to 6,483 million yen in 1933-37. This is more than a threefold increase in fifty years—a somewhat slower rate of growth than Professor Yamada records in the entire national income. The estimate itself is highly questionable, however. It cannot be trusted either as regards the price deflator (wholesale commodity prices), or the figures on total employment and income per worker which are multiplied together to get total service incomes. Somewhat more reliable are Yamada's estimates after 1918, when income produced (at 1928-32 prices) in commerce, communications, public service, and the professions rises from 3,034 million yen in 1918-22 to 6,453 million yen in 1933-37.⁴²

One might expect historical changes in the labor force employed in service occupations to be estimated more plausibly. Beginning in 1920,

⁴² *Nihon Kokumin Shotoku Suikei Shiryō* (Tokyo, 1951), p. 130.

decennial censuses enumerate the working population in detail by principal occupation. Prior to that time the figures most commonly cited are those of S. Hijikata, used by Professor Yamada in the income estimate cited above. Joined with the census data, his series show the following growth in the services from 1880 to 1930:

TABLE V.8
HIJIKATA AND CENSUS ESTIMATES OF LABOR FORCE IN SERVICE OCCUPATIONS
OF JAPAN PROPER, 1880-1930*
NUMBER OF PERSONS IN 1,000's

	1880	1900	1920	1930
Total gainfully occupied.....	19,872	25,308	27,268	29,620
Total occupied principally in services, excluding domestics†.....	1,934	3,616	5,667	7,630
Commerce, catering, finance, etc.....	1,154	2,171	3,188	4,478
Transport and communications.....	123	395	1,037	1,108
Private professions and public services....	657	1,050	1,442	2,044
Ratio of service occupations, above, to total gainfully occupied†.....	9.7%	14.3%	20.8%	25.8%

*The 1880 and 1900 estimates of S. Hijikata, published in *Shakai Seisaku Jihō*, Sept., 1929, are quoted here from Yamada, *Nihon Kokumin Shotoku Suikei Shiryō* (Tokyo, 1951), p. 152. Official census data (occupational classification) for 1920 are from Imperial Cabinet, Bureau of Statistics, *Rōdo Tōkei Yoran*, 1930 (Tokyo, 1930), pp. 3-4, and for 1930 from the same bureau's *Kokusai Chōsa Saishō Hōkokusho*, 1930 (Tokyo, 1938), pp. 202-203. The census's occupational distribution is used here rather than its distribution by industries. It classifies people according to their reported chief occupation (carpenter, salesman, etc.), or, if unoccupied, by their most recent type of employment. The 1920 census total in the occupational classification is increased here by the addition of 642,000 domestics (derived from the industrial classification) to make it more nearly comparable with the 1930 total.

†Also excludes any service personnel classified in an undefined miscellaneous category amounting to 4 per cent or less of the total labor force in each year.

The census figures for 1920 and 1930 probably come fairly close to the mark in distributing people by their principal occupation. As a measure of employment they are subject to more qualification. They fail to record the amount of part-time employment, or the labor contributed to an occupation by persons for whom it was a subsidiary employment. Neither is necessarily a constant percentage. Hijikata's pre-1920 estimates, however, are much more open to doubt. They almost certainly understate the number of people in commerce and transport in the early years, and they progress in each category by regular (sometimes rising) increments from year to year. This is most implausible, to put it mildly.⁴³

It is reasonable to conclude, nevertheless, as this table suggests, that Japan's economic development brought a large rise in employment (and

⁴³ For example, the number recorded by Hijikata in commerce increases about 50,000 every year from 1876 to 1920, when it equals the census figure. In the professions there is a regular increment of 18-20,000, and in industry about 100,000 every year. I am indebted to Harry Oshima, of the United Nations Secretariat, for pointing this out. While I have not had access to Hijikata's original publication, it seems likely that he began with certain estimates of the size and distribution of the working population in the 1870's, and then extrapolated the changes to the 1920 census more or less evenly over the intervening years.

product) in the service occupations. The figures themselves indicate a threefold increase from 1880 to 1930, with an advance from 10 to 25 per cent in the proportion of the labor force finding its chief occupation in these tertiary employments. Whether or not the pre-1920 figures are worth much, one may reasonably infer that there was already in progress the trend revealed by the later interwar censuses.

From 1920 to 1930 a gain of 2.4 million occurred in the total number of people who reported themselves gainfully occupied (though they might have been wholly or partly unemployed on the date of the census). The bulk of the increase appears to have been absorbed in the service occupations. In private education, medicine, law, and religion the number rose from 622,000 to 752,000; in civilian-government administration (excluding state-owned enterprise) from 335,000 to 436,000; in hotel and restaurant employment from 714,000 to 1,161,000; and in trade from 2,108,000 to 3,255,000. The decade of the thirties, with its industrial boom, considerably modified this trend. The 1940 census registered the principal gains in manufacturing and the armed forces. The civilian labor force increased 3.1 million over 1930, but civilian services (industrial classification, excluding domestics) absorbed only 828,000, as against 2.3 million drawn into industry. Yet the secular drift of civilian employment away from the extractive industries is only accelerated.

In this expansion Colin Clark finds verification of the fact that economic progress, in Japan as elsewhere, has induced a progressive shift of resources out of the primary industries and into the services as well as manufacturing.⁴⁴ No doubt this is true. As evidence of such progress, however, labor-force figures like those above must be used with caution. For economic growth meant specialization of functions. And increasingly such services as transport, selling, and finance, once performed extensively by farmers or handicraft workers as subsidiary functions, now came to be separated out as specialized occupations. Once a farmer might borrow from another farmer; now he was more likely to borrow from a bank or co-operative society. Once he might transport and market his own product, if he did not consume it himself; now an increasing share was marketed at a distance and handled by merchants, banks, and railways. Once food processing and amusements were largely confined to the home; now they developed as large commercial occupations. Thus, institutional groupings like transport and trade tend to gain in relative importance in the occupational statistics more rapidly than the actual functions themselves. The growth in the former exaggerates the growth in the latter.

⁴⁴ *The Conditions of Economic Progress*, p. 122. "Studying economic progress in relation to the economic structure of different countries, we find a very firmly established generalization that a high average level of real income per head is always associated with a high proportion of the working population engaged in tertiary industries" (pp. 6-7).

There is a second reason why the rise of employment in the services is a less satisfactory index of economic progress in Japan than in most Western countries. For in part it simply reflected the pressure upon limited employment opportunities in other fields. Population growth was pushing large numbers of people into food peddling, ricksha pulling, domestic service, and other stop-gap occupations for want of any more skilled and permanent employment. Clark finds the share of total employment offered by the service industries "inexplicably high" in prewar Japan by comparison with other industrial countries.⁴⁵ Also, his figures on the United States, Great Britain, and other countries show income per occupied worker to be rather large in this field compared with manufacturing, while in Japan it is not. Yet it is not surprising if per-capita productivity in a large share of the Japanese service trades, relative to other industries, was considerably lower than in most Western countries, owing to the number of workers forced into unskilled and low-paid services for lack of suitable alternatives.

The recorded shift of employment to the services, therefore, cannot be taken entirely as a sign of growth and maturity. In such occupations as retail commerce, it helped to preserve the primitive organization, the underemployment, and low per-capita output long characteristic of these trades throughout the Orient.

NATIONAL INCOME AND LIVING STANDARDS

What summary conclusions may be drawn concerning the rate of expansion in the Japanese economy, considered as a whole?

The best criterion is the over-all growth in net national product, i.e., the annual flow of goods and services produced in Japan for consumption and new investment, after allowance for materials, fuel, and other producer goods used up in the process of production. Yet to arrive at any satisfactory measure of real product is a difficult undertaking, particularly in a country still passing through the early stages of industrialism and capitalism. It is impossible at best to give any very meaningful expression to "average" changes in various categories of activity over a long period of time, when the components and techniques of production underwent such radical changes as in prewar Japan. There were also wide fluctuations in prices to be allowed for in some fashion. Moreover, the gaps and deficiencies in Japanese statistics are so serious, especially before 1920, that one has to resort to crude techniques of estimation which permit a very wide range of error at best. Some will question, indeed, whether the concepts of national-income measurement really have much applicability where so much economic activity is still carried on within the household, where the functions of commodity production and various services are often so intermingled in the livelihood of families and individuals, and

⁴⁵ *Ibid.*, pp. 182, 342.

where even commercial markets for goods, labor, and capital are as localized as they were in Meiji Japan.⁴⁶

It is interesting, nevertheless, to see what conclusions emerge from Japanese investigations in this field. By far the most comprehensive inquiry yet published is that of Professor Yuzo Yamada, of Hitotsubashi University, in *Nihon Kokumin Shotoku Suikei Shiryō* (Tokyo, 1951). Drawing on previous studies, and utilizing such data as are available, Yamada presents a series of rather detailed estimates covering the entire period 1875 to 1949.

Yamada Estimates

Yamada's summary estimates of national product in Japan, at constant prices, are given in Table V.9 for the years 1883 to 1937. The author himself acknowledges their provisional character. Without entering upon a long critique here, we may note several of the chief questions.⁴⁷ In so doing, one should also pay tribute to Professor Yamada's valiant effort to grapple with the problem and advance the frontier of historical national income studies in his country.

First, the use of a general price index of commodities at wholesale to eliminate changes in the value of money is quite unsatisfactory for all of these series, especially service incomes. (See Table V.8, footnote *.) Since wholesale commodity prices in city markets doubtless rose more rapidly from 1885 to 1920 than the general buying power of the yen depreciated, one broad tendency is to minimize unduly the growth in real output through this earlier period. Conversely, wholesale prices fell somewhat more sharply from 1920 to 1930, so that this deflator exaggerates the actual expansion of net product during the twenties. Even in the commodity sector one questions how adequately Tokyo prices reflect changes in regional and local markets.

Second, a considerable amount of unrecorded output produced and consumed within the peasant household economy is probably omitted, particularly in the early years. This includes fish, seaweed, and vegetables; charcoal and other forest products; clothing and household utensils of wood and straw; fertilizer; buildings; land improvements; etc. On this score, Yamada's figure for commodity output during the eighties at current yen values possibly should be raised by 10 per cent, perhaps more.

Third, net product in each commodity sector rests on estimated ratios of net to gross income, which are less trustworthy the farther back they are carried. Probably they impart some upward bias, too.

Fourth, no allowance can be made for sweeping changes in the quality of many goods and services brought about by industrialization. On this

⁴⁶ See Harry Oshima, "The Price System and National Income and Product," *Review of Economic Statistics*, XXXIII, No. 3 (Aug., 1951), 248-254.

⁴⁷ I am indebted to an unpublished memorandum by Harry Oshima, of the United Nations Secretariat, for an appraisal of the Yamada figures on these and a number of additional points.

score there is probably considerable unrecorded gain in the later decades. This might tend to offset in some degree the probable exaggeration in the quantitative calculations of output.

Finally, the whole computation of service incomes before 1920 (as well as workshop production) rests on a shaky foundation. It consists in multiplying estimated per-capita income in this sector by employment, both of them calculated from quite inadequate data. As remarked earlier, estimates of labor force in pre-1920 Japan, and still more of employment, are of dubious reliability owing to the lack of accurate census figures, and the large but unrecorded amount of part-time employment (e.g., of farmers' wives) in agriculture, household industry, etc.

For these reasons no precise significance can be attached to the figures of Table V.9. They can only be taken to represent, in very rough fashion, the persistent tendency to expansion which characterized the Japanese economy over this half-century after 1885. The aggregate-product series is probably closer to the truth than its component series, for the reason that some of the errors and biases in the latter tend to cancel each other. Its direction and rate of change are something like what one would expect from many known facts: the increase in population; the rapid accumulation of capital; the application of science and machinery to the productive process in many industries; the gain in fuel and power consumption; the expansion of buying power in home and foreign markets; the slow rise in living standards; and the building of war potential.

In the light of such supporting evidence, certain broad conclusions may be stated with reasonable assurance.

Japan's productive powers increased rapidly and continuously in the seventy years following the Meiji Restoration. The aggregate increase, as suggested here, was fourfold from 1885 to 1935. This is an annual rate of nearly 3.3 per cent. According to Yamada's figures, real income produced within the country nearly doubled in the quarter century before 1910. It then doubled again during World War I and the postwar decade. In the boom of the thirties the index climbs another 50 per cent. As would be expected, the total-product series falls in between the slower advances of primary production, and the more rapid gains in manufacturing and large-scale transport. As would be expected, too, the net value of output in primary production gains more slowly after 1910 than the physical output series of Table V.2. Gross production increases were achieved only by heavier use of fertilizer and of other intermediate products in fishing and mining.

Meanwhile the population of the country rose from 39 million in 1885 to 69 million in 1935. Yamada's figures therefore imply a per-capita increase of 150-200 per cent in net output. One hesitates to put much faith in the estimates of gainful employment for reasons already stated. Per worker, however, it might be safe to say that industrialization brought a cumulative gain of at least 200 per cent in average net product over

TABLE V.9
YAMADA ESTIMATES OF NET NATIONAL PRODUCT OF JAPAN PROPER,
1883-1937 (AT 1928-32 PRICES)*

	AGGREGATE NET PRODUCT (MILLION YEN)				PER-CAPITA NET PRODUCT (YEN)	
	TOTAL	AGRI- CULTURE, FORESTRY, FISHING, AND MINING†	MANUF- ACTURING (AND CON- STRUCTION)†	SERVICES‡	PER-CAPITA, TOTAL POPULA- TION	PER-CAPITA, GAINFULLY OCCUPIED
1883-87 . . .	2,854	920*	513	1,421	74	132
1893-97 . . .	4,114	1,410*	877	1,827	98	170
1903-07§ . . .	4,584	1,921	967‡	1,696	98	175
1908-12 . . .	5,593	2,218	1,283	2,092	112	208
1913-17 . . .	6,344	2,310	1,748	2,286	119	233
1918-22 . . .	8,085	2,768	2,283	2,750	144	297
1923-27 . . .	10,247	2,654	3,085	4,568	171	360
1928-32 . . .	11,931	2,672	3,927	5,334	186	402
1933-37 . . .	14,926	3,141	5,329	6,483	216	475

*Net product estimates are from Yuzo Yamada, *Nihon Kokumin Shotoku Suikei Shiryō* (Tokyo, 1951), p. 130, except that per-capita product (total population) is calculated here from "de facto" population figures before 1920 (above, p. 134). To compute net product in manufacturing and services, Yamada places extensive reliance on estimates of gainfully occupied persons before 1920 by S. Hijioka and thereafter in decennial national censuses. The serious deficiency of these figures as a measure of actual employment has been mentioned earlier in this paper.

Yamada's concept is net income produced within Japan, without correction for the net balance of investment income and labor earnings remitted between Japan and overseas areas. Current yen values are converted to values at 1928-32 annual average prices by means of a simple average of wholesale commodity prices. Throughout most of the period he used a Bank of Japan index which is an unweighted arithmetic average of monthly price relatives for fifty-odd commodities in Tokyo. This poorly constructed deflator is ill-suited to each category of output, and especially services, both because of the selection of commodities it comprises and because Tokyo prices are apt to deviate from prices in other parts of the country, notably rural areas. A cost-of-living index would probably be better, though still unsatisfactory; in any case it is not available except for the later years.

Income produced in the commodity sectors is computed largely by applying net-income ratios to gross-product estimates. It is intended to represent net product at market prices, including indirect taxes. Various assumptions are made; for example, an unvarying net/gross ratio of 40 per cent is applied to factory output prior to 1930, despite great changes in industrial structure. In workshop industry the ratio is put at 60 per cent before 1900 and 55 per cent thereafter. Gross product in these small plants prior to 1933 is estimated by multiplying estimated employment here by 40 per cent of gross product per worker in factory industry (the 1930 ratio). From 1886 to 1895 it is assumed to be one and one-half times factory gross product. In agriculture, a fluctuating net/gross ratio is computed. It rises from 82 per cent in 1883-87 to 88 per cent in 1893-97, and then declines to 70 per cent in 1933-37, reflecting mainly heavier expenditure for commercial fertilizer. Probably a considerable quantity of farm produce, wood fuel, and handicraft manufactures, as well as fishery and mineral output, is omitted in the earlier decades, thus exaggerating the real rate of long-term growth.

Lacking sales and income figures for many of the service trades before 1930, Yamada begins with average net income per gainfully occupied person in all such trades in 1930 (650 yen), and extrapolates this figure through the years before 1919 by an average of changes in wholesale commodity prices and wages. The resulting series is multiplied by estimated employment in these trades to get net product aggregates. From 1919 on reliance is placed largely on more direct evidence of incomes. The logic of the former method is certainly open to question, and the employment figures are no less problematical.

†Fishery and mining output is omitted altogether in these earlier years. Its inclusion would raise the figure for agriculture, etc., to over 1,000 million yen in 1883-87, and to 1,500 million yen or more in 1893-97. The total and per capita product series in these years would accordingly each be increased by at least 4 per cent.

‡It is implausible that net output should have increased only 10 per cent in manufacturing from 1893-97 to 1903-7, and in services actually declined.

§Given erroneously in Yamada's final tables (pp. 128-130) as 767 million yen. (See pp. 126-127.)

50 years. Yamada's index itself actually advances at a rate of 2.6 per cent a year. Most of the increase in aggregate output, in other words, is attributable to the rise in the unit efficiency of labor resulting from technical and other changes, and not merely the greater input of labor.

It is interesting that national income as measured here shows no

tendency for the upward trend of expansion to taper off over the fifty-year period. This is true even if the boom of the thirties is discounted so as to allow for the deterioration which took place in the terms of international trade. The latter signified that real income available for consumption and capital formation failed to advance as rapidly as the physical volume of goods and services produced in Japan; a larger share of the benefits of trade went to foreign consumers of Japanese exports. Nevertheless, the persistence and continuity of economic growth in prewar Japan suggests that her achievement in this respect is to be compared with that of Western industrial nations in their earlier (and most recent) periods of growth, rather than in their experience between the two world wars. Despite the contrast in objective circumstances, the analogy is rather with Britain from 1810 to 1860, or the United States and Germany during the next half century, when great lands and resources were being opened up to exploitation and settlement.

Japan's good fortune in escaping the ravages of the first European war—even profiting handsomely from it—and her success in freeing herself quickly from the constriction of the Great Depression have much to do with her rather impressive showing in any international comparisons of secular growth in income, trade, and production since 1900. Her rapid expansion from 1914 to 1936, while the Western industrial world wrestled with war dislocations and unemployment, had extensive repercussions both upon the world balance of power and upon industrial competition in world markets. The decade of the forties, and perhaps the fifties, is another story. For the first time in their modern history, the Japanese involved themselves in a military struggle which dealt shattering blows to their domestic economy and helped destroy the foundation of international trade upon which they had built their prosperity.

Income and Consumption

If these statistics of growth are anywhere near the truth, this half century of industrialization brought a marked reduction of the pressure of population upon resources by comparison with anything known previously in Japanese history.

Japan has remained heavily overpopulated throughout modern times, so far as economic welfare is concerned. Had there been fewer people, income per capita would have been higher and probably more evenly distributed. Equally, however, the pressure of population was being gradually relieved by the growth of income and wealth. This process went forward steadily with only temporary setbacks, until war destroyed the civilian economy after 1938 and produced an overpopulation crisis of first-rate magnitude.

Any definitive measurement of the rise in Japanese living standards after 1868 would require prolonged investigation. If this is the most important aspect of economic history, it is also the most difficult. Since 1926

Japan has had an excellent record of family budget studies, better than many countries. Prior to that time, however, materials are fragmentary. One is forced to rely on wage statistics, on estimates of net national "disappearance" of a few staple commodities, or on the inconclusive testimony of individual observers whose personal acquaintance with Japanese life extends over a long span of years.

On the face of it the meager livelihood of the masses of people in Japan at the end of the prewar era, even the dire poverty of millions of tenant farmers and unskilled workers, seems to challenge the evidence offered above as to the expansion of national output. How could a growth of such apparent magnitude have left most of the population so close to the minimum of subsistence, as Westerners would regard it? In considering this question, one must understand that only a fraction of the growth in aggregate Japanese output went directly into raising the plane of living of the mass of peasants and urban workers from traditional, pre-industrial levels. For this there are several reasons. Some apply with special force to the case of Japan, but mostly they are inherent in the problem of developing any "backward area."

First, the increase in population obviously operated as a heavy drag on the rise in living standards in prewar Japan. In fifty years the population nearly doubled. This alone meant that much of the net gain in total production was absorbed simply in feeding, clothing, and housing a greater number of people.⁴⁸ Even in the later years as much as half or more of Japan's total civilian income, and 75 per cent of the income of most households, had to be devoted to meeting these basic wants of the swollen population in a very meager fashion. When consumer expenditures as a whole dropped below 40 per cent of gross national product during World War II, there was widespread deprivation.

Second, per-capita changes in net product do not result in equivalent changes in real income if exports no longer exchange against imports on the same terms. For part of the national product is not used at home, but exported in payment for imports which are the real income.⁴⁹ If the terms of exchange move unfavorably to a country, real income in the form of consumption and net additions to capital will fail to rise as much as output expands. This was true of prewar Japan after 1928. In 1935-39 the import-price index stood at about the same level as in 1928/29, whereas the export-price level had dropped 30 per cent. Here was one reason why the industrial boom of 1931-38 failed to bring larger benefits in consumption. Japan lost a billion yen a year of real income

⁴⁸ The number of "consumer units" actually increased less than the total population, for the percentage of children increased. Also population growth itself may have stimulated the growth of total production in some degree. However, these qualifications hardly affect the main argument. Offsetting them is the fact that a high dependency ratio meant a high ratio of unproductive persons in the population.

⁴⁹ Strictly speaking, it is the imports retained for domestic use, and not processed for re-export, which constitute real income.

(at 1930 prices) from 1934 to 1938 through exporting as much as she did at the prices then prevailing, by comparison with what she would have enjoyed had she been able to purchase her 1934-38 imports at the 1930 terms of exchange. In other words, while net national product is estimated to have risen from 10 billion yen in 1930 to 15 billion in 1936 (at 1930 prices), 20 per cent or so of this gain yielded no corresponding gain in real income to the country.⁵⁰

Third, some of the rise even in per-capita income was more apparent than real during the prewar decades, for it represented goods and services which were required for urbanization and industrialization but did not actually increase real consumption from its earlier level. As cities grew, food and raw materials had to be hauled longer distances. As market organization became more elaborate, complicated structures of merchandising and finance had to be created. As industrialization proceeded, the needs for government services multiplied. All such activities gave employment and produced income in the national accounts. But they themselves did not directly raise living standards; in Simon Kuznets's phrase, they yielded only "intermediate" product. From a broad social viewpoint they are more properly reckoned as the costs rather than the gains of modern economic organization. This is quite aside from the point that some of the most serious human costs of industrialization fall entirely outside national income accounting—e.g., the disease and accident rates produced by city slums and poor factory standards.

Fourth, prewar Japan presented a picture of extremes of wealth and poverty. The base of the income pyramid comprised the great mass of peasants and urban workers whose family incomes in 1930 still fell below 800 yen (\$370). Numbering 10.6 out of Japan's 12.6 million families, in that year they received only half of the country's household income. Over them stood a small middle class of 1.8 million families whose 800-3,000 yen incomes amounted to 30 per cent of aggregate family income. Above this bracket in turn were 180,000 families receiving the entire remainder, at least 22 per cent. At the very peak a mere 1,800 well-to-do *zaihatsu*, aristocrats, and other landlords appropriated at least 10 per cent of aggregate family income.⁵¹

Whether income and wealth were more or less unevenly distributed in 1880 than in 1930 we do not know. The events of the Restoration period had a certain leveling influence, in that they destroyed the great feudal income of the old ruling class. On the other hand, the nobility was pensioned off, not wholly expropriated, and a new aristocracy of wealth soon grew up on the foundations of the new capitalistic order. Attempts to measure the subsequent shifts in income distribution from tax statistics, using Pareto's formula, are not convincing. Both the statistics and the formula itself are deficient. However, it is evident that the stock of

⁵⁰ *The Place of Foreign Trade in the Japanese Economy*, I, 24-26.

⁵¹ Rough estimates compiled in *National Income of Japan*, p. 233.

productive wealth grew rapidly; that returns on property, relative to labor, remained relatively high; and that the size and concentration of property incomes caused gross disparities in income to persist. In agriculture, tenant rents and interest on farm debt probably took close to one third of net agricultural income during most of the interwar years. In factory industries producing similar goods the average wage to net-product ratio was 44 per cent in the United Kingdom (1935), 40 per cent in the United States (1937), and only 27 per cent in Japan (1934).

All this does not mean that the wealthy propertied class swallowed up the entire gain from Japanese economic development. Rent, interest, and profits together comprised only 25-30 per cent of national income in the thirties (excluding the property income accruing to entrepreneurs jointly with the return on their labor). But a small group in the population was able to appropriate far more than their per-capita share of the aggregate growth in income. The extreme skewness in the curve of income distribution was both the cause and effect of corresponding inequalities in economic opportunity. It was sustained by the underlying pressure of population on resources; the aristocratic, hierarchic aspects of Japanese social structure; the cohesiveness and enterprise of the great zaibatsu families; the leniency of their tax obligations; the opportunities they enjoyed for political favors and speculative gains; and other such factors which worked to perpetuate a few towering fortunes in a sea of poverty.⁵²

Fifth, the Japanese economy was a dynamic one characterized by a high rate of savings and investment, compared with that of any other Far Eastern country. This meant that a significant part of annual net product—possibly as much as 15 per cent in the later boom years—was withheld from consumption and applied in building up the plant, equipment, and inventories of the country. Whether the share of income withheld from consumption for purposes of adding to capital stock tended to grow as industrialization proceeded is not known; possibly it did. Also a growing share of gross production went into replacing the wear and tear and depreciation of existing capital assets, as industry became steadily more capitalistic and as agricultural yields were forced upward by heavier doses of fertilizer and careful preservation of the land. Through this process the production of consumer goods steadily increased. But the resources applied to capital formation were not immediately available for consumption purposes.⁵³

⁵² These brief observations are drawn from *The Economic Development of Japan*, chap. v.

⁵³ The complex of factors affecting the rate of capital formation in modern Japan is discussed at length in *The Economic Development of Japan*, chap. v. In the pattern of accumulation relied upon by the Japanese one major element was the great inequality of income and wealth mentioned above. This facilitated a higher rate of savings and a smoother and more efficient management of the investment process than could otherwise have been maintained without far more extensive

Finally one must allow for the drain on living standards imposed by the costs of war, armament, colonies, and strategic industries. In what periods, and to what degrees, these outlays may have been justified on political and military grounds need not be argued here. In economic terms, however, such expenditures, and the whole emphasis in national policy which they reflected, represented in the main a diversion of resources away from the production of goods and services for civilian use. To be sure, their net effect is sometimes exaggerated so far as the period before 1937 is concerned. Deficit financing of military expenditures from 1867 to 1893, and in each of Japan's three succeeding wars, tended to expand money incomes and productive activity. To some degree it paid for itself, in the sense that it stimulated the fuller and more efficient utilization of resources. In the interwar periods, moreover, direct and indirect outlays for military purposes probably rarely exceeded 10 per cent of national income at most. During war years, however, the burden ran much higher. And even in "normal" times, the military establishment was consistently an item of top priority in the national budget. They absorbed 35-50 per cent of national government expenditures from the Sino-Japanese war on. This severely handicapped expenditures for education, rural development, and other programs of social welfare which were sorely lacking in Japan and which only the government could undertake.

Rise in Consumption Levels

These various circumstances meant that only a part of the aggregate growth in income produced in Japan was actually available for raising the consumption standards of the population from the levels which prevailed in the early decades.

and very skilful use of the instrumentalities of state accumulation and investment. Yet other Asiatic countries with no less plutocratic structures have not managed a similar rate of capital formation in modern times. The decisive factors really lay elsewhere.

These factors, in my opinion, were (1) the whole conjuncture of forces which created and sustained through most of the prewar decades a high level of expectations regarding the profits and power which would accrue from investment in new productive assets (as distinguished from existing land, treasure, etc.); and (2) the positive response which these forces drew forth from Japan's political and business leadership, and more pervasively and imitatively from masses of small farmers and businessmen. The stimuli included such circumstances as the inflow of technology from the West, the new framework of national unity and order, trading opportunities abroad, the growth of population and urbanization, the defense needs and imperialist opportunities of the nation, etc. If they elicited a more dynamic response in Japan than among her neighbors, the explanation must be sought ultimately in the realm of social structure and ideals. Together opportunity and response produced a cumulative, boot-strap process of development which, if it failed entirely to solve the problems of distributive justice and worked unevenly in various sectors of economic life, yet created new income and wealth in ever-increasing amounts.

That the rise in living standards was substantial, nevertheless, there can be no doubt. For one thing, the mere disappearance of famines and epidemics on a great scale, as well as earlier practices of infanticide, is itself strong evidence. A Japanese male born in 1935, from the mortality experience of that year, could expect to live at least ten years longer than his grandfather born in the eighties. He could hope to live twenty years longer than a Chinese boy of the same age. Medical science can now reduce the incidence of many diseases without great improvements in the standard of life in other respects. However, mortality rates in general have been closely correlated with levels of food consumption and income. If Japan's standards of nutrition, housing, and medical care were still grossly inadequate, she had nevertheless attained by this time an enviable position in Asia. Mortality had dropped to the point where she was now to be classified with France, Spain, and Eastern European countries having "middle" death rates of 15-19, rather than with most Asiatic countries where the rate exceeded 30 or more.⁵⁴

Other evidence of improvement in the well-being of great masses of people in Japan can be found in wage statistics. These statistics relate largely to industrial workers. Even here they are too unreliable to give more than a crude approximation of the change which took place, especially before 1914. They are worth examining, nevertheless, as they testify to the broad tendency of economic growth.

The best available index numbers of the average daily earnings of Japanese industrial workers, and their buying power, are pieced together and summarized in the following table (1914=100).⁵⁵

	MONEY WAGES	COST OF LIVING	REAL WAGES
1895-99	(50)	(69)	(73)
1905-9	(84)	(91)	(92)
1914	100	100	100
1915-19	142	142	101
1920-24	302	212	141
1925-29	317	204	155
1930-34	284	163	174
1935-39	312	189	166

⁵⁴ "Food, Income and Mortality," *Population Index*, XIII (April, 1947), 100-101.

⁵⁵ For the years prior to 1914 I have merely averaged daily earnings in 27-40 industrial (largely handicraft) and service occupations, and deflated them by a wholesale price index based on 15 staple commodities. From 1914 to 1925 money wages are represented by the index of the Ministry of Commerce and Industry, based on the daily earnings of industrial workers in 13 cities. Thereafter the Bank of Japan factory wage index is used. The cost of living is represented for the years 1914-33 by T. Uyeda's index for Tokyo industrial workers, and after that the *Asahi Shimbun's* index for 13 cities. For further details and sources, see *The Economic Development of Japan*, pp. 143 ff.

Real wage rates—the purchasing power of the average daily earnings of employed industrial workers—would appear from these statistics to have risen about 33 per cent between the years 1897 and 1914. No great reliance can be placed on the data for this early period. The wage information is scanty and the cost of living is expressed merely by certain commodity prices at wholesale. The worker's actual living costs probably advanced less rapidly than wholesale commodity prices, however. If the two measures given here are at all representative, the buying power of industrial wages did not increase by less than one-third. This may seem a modest gain, especially as the worker's needs were also increased by urbanization and factory life.

More accurate is the estimate beginning in 1914. Over the next twenty to twenty-five years it would appear that real wage rates advanced 65-75 per cent on the average in Japanese industry. Most of the rise occurred in the decade 1914-23, through the fact that money wages failed to decline after World War I in proportion to the fall in prices. The same phenomenon occurred again in the depression of 1929-32. But this gain was partly canceled out during the inflationary boom which followed. While industrial employment revived after 1932, the depressed condition of Japanese agriculture retarded wage increases in industry. A growing share of manufacturing output went into plant expansion, armament, and payment for imports. Total manufacturing payrolls are of course a product of both wage rates and employment. In the twenty-five years after 1914 the buying power of aggregate payrolls in factory industry probably rose fivefold. In all manufacturing, including small workshops, it must have increased by something like 150 per cent.

One would conclude from the above table that the average industrial worker in Japan was able to buy twice as much with his daily earnings in 1937 as he could have afforded in 1897. There was no "average worker," needless to say. This limits the usefulness of any calculation which lumps together all men and women of various grades and skills employed in various branches of industry. Moreover, consumer needs and spending habits tended to change, so that any cost of living measure of this sort is an abstraction, too. Certainly the index does not measure welfare, which takes in other values as well. Nevertheless, one finds here some corroboration of the slow improvement in the material position of the Japanese worker through the process of industrialization. In agriculture the advance was slower, especially in the more remote prefectures of the country; in particular industries it was more rapid.

As one would expect, the statistics suggest that the rise in real wages over half a century lagged far behind the rise in total national output, which now had to support a much larger population. For other reasons already mentioned, the gain also falls somewhat short of the estimated rise in per-capita product. In this respect the relationship between the estimates is a reasonable one, which lends somewhat greater credibility to them both.

Still more direct evidence of the advance in Japanese living standards can be found in the per-capita consumption of staple foods, clothing, and other measurable items in family budgets. These, of course, must be judged against the traditional background of extreme poverty for all but the privileged few; also in terms of the frugality and simplicity of Japanese consumption habits down to the present day.

The food intake of the average Japanese appears to have risen appreciably in the forty or fifty years ending in 1930. It also became more diversified, especially among the urban classes. Rice consumption per capita seems to have risen about 25 per cent.⁵⁶ In part this meant more calories, in part the preferred substitution of rice for barley, which is itself an index of a rise in income. At the end of this period the average Japanese was eating about a pound of rice a day. He still depended on this staple for over half his diet, excluding fish, meat, and sugar. The intake of fats and proteins in the form of fish products increased more rapidly. Official data, which should probably be discounted, record nearly a twofold gain in fish consumption per capita during the first three decades of the twentieth century.⁵⁷ There were also substantial increases in a good many lesser items—in sugar and salt, in wheat, soybeans and fruit, and (on a very small scale) in meat and dairy products.

Food production and imports, according to E. F. Penrose's index, show a 20 per cent increase in per-capita food supply from 1910-12 to 1925-27 (disregarding exports, which were of minor importance). This limited rise was made possible only by increasing imports from overseas. Similarly, growing imports of cotton and wool brought a concurrent increase of 40 per cent or more in the domestic use of all clothing fibers per person. Other diverse improvements in welfare now also become evident: i.e., the widespread use of electric lighting replacing the kerosene lamp, itself an earlier innovation; the increase in postal traffic, railway passenger travel, buses and bicycles; the tiled roof of the more prosperous farmer; the wool clothing and leather shoes now seen among middle-class men and boys; the spread of literacy and expansion of book and newspaper sales; the cheap Western-type gadgets of which the Japanese seem so fond.

During the decade after 1926, increased consumption of food and clothing materials just about kept pace with the growth of population, now at its full tide. Per-capita intake of food remained at about 2300 calories per day. Consumption of clothing materials averaged around 10 pounds per year, rising slightly over the period. Such further gains as were recorded in living standards, before the wartime deterioration set in, seem mainly to have accrued in housing and household equipment; in travel, recreation, and education; and other amenities which come within reach as income rises from the subsistence level.

⁵⁶ Wen Yuh Swen and Carl L. Alsberg, *Japan as a Producer and Importer of Wheat*, Wheat Studies of the Food Research Institute, Stanford University, VI (July, 1930), 377.

⁵⁷ Orchard, *op. cit.*, p. 18.

For most people in Japan, nevertheless, the plane of living remained far below the minimum requirements of health, comfort, and security, even by Japanese standards. On an income of three yen a day—the average earnings of an urban worker family in 1935/36—over a third of family expenditures still went for a simple diet of boiled rice, soybean soup, pickled radishes, and a few vegetables, with now and then some fish. The mass of small farmers managed to eke out an even more meager existence only by unremitting toil on the part of the whole family. The bare necessities of existence were leavened only by a few comforts, mostly of the traditional variety. If the peasant had won some security from great natural calamities, and the harsh political oppression of feudal times, he was now exposed to the vicissitudes of a money economy and the demands of the landlord and moneylender. Standards of sanitation, education, and housing were still needlessly low, in the city as in the country. In factory legislation and social security Japan lagged far behind modern democratic practice. Nor was this offset by the much-advertised paternalism of the Japanese employer. The poor conditions of life and work in the great cities still took their toll in excessively high mortality among women of childbearing age, and among adult young men. Historically, these seem to be the inevitable costs of industrialism in its raw early stages. But there was now far less justification for such conditions in Tokyo and Osaka, than, say, in Bombay or Shanghai.

If the consumption levels prevailing in Japan remained extremely modest at the end of the prewar era, judged by Western standards, this testifies both to the deep poverty of the country before economic development set in, and the magnitude of the task of lifting that burden of poverty in the face of a doubling of the population and other social and physical obstacles present in Japan. Yet there can be no doubt that the expansion of the nation's productive powers over seventy years had raised the general level of economic welfare for most of the people appreciably above that of Commodore Perry's day. Japan had also emerged on the world stage as an aggressive, front-rank military power, soon to make her spectacular bid for dominion over East Asia. This also reflected the technical achievements of industrialization, as well as the social stresses and insecurities which all too frequently accompany the progress of modern industry.

Foreign Capital and Domestic Development in Japan*

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THE PATTERN of Japan's evolution, and indeed the secular evolution of any economy, may be analyzed in terms of a fourfold conceptual structure: (1) the production functions which are to be altered so as to raise productivity; (2) the economic resources which are available at various "prices" for reallocation, both directly in the new production functions and indirectly in the secondary effects of innovation and general development; (3) the socioeconomic structure which conditions the desire, direction, and feasibility of economic change; (4) the socioeconomic propensities which express the habits and values of the society. The interrelations among these four major features in each historical case are complex; changes in any one of them may stimulate, reinforce, or obstruct the others in relation to the process of economic development.

The examination of any particular case may select one of these features, or a subfeature, as a strategic factor and follow it through the economy, both in cross-sectional (static) analysis and in sequential (dynamic) analysis. In the present study, the inflow of foreign capital—which in itself is an addition to the available economic resources (feature 2 above) is taken as a significant strategic factor; and its role is traced through the complex process of Japan's evolution from 1868 to the 1930's.

In that evolution, foreign capital made a critical contribution, although it was neither the prime mover nor the principal source of support. Dependence upon outside assistance was minimized by strenuous domestic activities, aided by certain favorable circumstances in the world economy. A long period of rather modest progress after the revolution of 1868 led up to an acceleration at the end of the nineteenth century, when the growing emphasis on industrialization and armament caused the Japanese to seek substantial external aid. The subsequent inflow of foreign capital was appropriate in type and timing, and its absorption into the economy

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was efficient; but the goal of full self-support remained beyond attainment for over thirty years.

Japan's evolution is an extreme example of how much can be achieved in a poor country receiving a relatively moderate amount of foreign assistance. To the extent that basically similar underdeveloped countries today cannot or will not match the Japanese domestic performance, let alone surpass it, they face the prospect of either a lower rate of development or a heavier dependence on external assistance. At the same time, the Japanese experience qualifies certain current doctrines on international capital flows and implies alternative standards for successful assistance to economic development.

Neither foreign capital, nor imported ideas, personnel, or goods, provided the driving force in Japan's evolution. That force was indigenous, consisting in a peculiarly positive and constructive reaction to internal trends and external influences. Western contacts served as stimulus and guide only because the society provided a creative response. Japanese culture was long notable for its eclecticism, and for its practical and experimental bent. Long-run economic development was promoted by the ambitions of the ruling classes, the autocratic social structure, the docility of the masses (until driven to extremes), and in nearly all classes a patriotic fervor, a long-term outlook, and a low discount of the future.

During the Tokugawa era of virtual seclusion, foreign goods and capital were almost negligible, but Western ideas and practices, brought by the few traders and missionaries, helped give new direction to a feudal society which was disintegrating from internal causes. When Japan was opened to foreign intercourse in the middle of the nineteenth century, the impact of the West galvanized many of the earlier trends. The outstanding event was the political revolution of 1868, which brought to power a new dynamic group and transformed the old feudal structure. At this time colonization was in full swing elsewhere in Asia, and the Japanese government was compelled to yield certain concessions to foreign powers, notably, extraterritoriality and tariff limitation; nevertheless, the Japanese kept effective control of their own country. In their efforts to build up economic and military strength, the Japanese had access to a long list of "innovations" already developed in the West. However, practical foreign ideas, technological, commercial, and administrative, were far more in demand than cultural ideas, and "the Japanese exercised a choice between European models and did not follow any one of them exclusively."¹ Western merchants, who came to Japan seeking not only a local market but also an entrepôt along the Asiatic coast, were welcomed by the Japanese, and foreign technical personnel were recruited; but direct investors were discouraged, and even the merchants and technicians were quickly imitated by the natives.

The inflow of foreign goods had a powerful effect in spreading the

¹ G. B. Sansom, *The Western World and Japan* (New York, 1950), p. 311.

practices of a money-exchange economy and also in accelerating the transformation of production, especially by destroying many of the traditional handicrafts. A similar catalytic effect flowed from the expansion of foreign demand for Japanese products, particularly for silk, coal, and copper. However, these influences arising from autonomous foreign demand might have led, via the line of least resistance, merely to expansion in extractive activities and a few ancillary services, while the economy relied upon imports for the new consumption goods, and neglected the industrial opportunities in the home market and in nearby Asia. Such a pattern was indeed noticeable in Japan until about 1885, and it has prevailed until recent times elsewhere in Asia. Even without political domination, colonial economic relations have meant at best increased production by specialization in exports of raw materials or exotic handicraft products, and at worst dependence upon a fluctuating foreign market and adverse terms of trade, accompanied by internal social disturbance.²

The significant departure from the colonial pattern occurred when the Japanese undertook to diversify their economy, with small beginnings

TABLE VI.
FOREIGN-CAPITAL INFLOW, JAPAN, 1868-1929

NET INFLOW (¥ 000,000's)*		
	PERIOD TOTALS (ACTUAL VALUES)	ANNUAL RATE (1905 VALUES)‡
Period I (1868-95)	¥ 2.4†	(negl.)
Period II (1896-1913)	¥ 1,500.0‡	84.5
Period III (1914-19)	-¥ 2,431.2*	-240.3
Period IV (1920-29)	¥ 2,772.1§	120.2

*Net of repatriation of foreign capital, and also net of Japanese investments abroad. Includes net movements of short-term capital.

†Funded borrowings during this period repaid by 1895 except for ¥ 2.4 million; outstanding direct investments by foreigners not known exactly, but believed relatively small. Based on H. G. Moulton, *Japan: An Economic and Financial Appraisal* (Washington, 1931, reprint ed. 1944), pp. 375-382.

‡Estimated by a combination of capital-inflow data and balance of payments data, as given in Moulton, *op. cit.*, pp. 382-392, and E. B. Schumpeter, *et al.*, *The Industrialization of Japan and Manchukuo, 1880-1940* (New York, 1940), end-papers, Table III.

§Balance of current items, cumulated over 1914-19 (from Schumpeter, *et al.*, *op. cit.*). Negative sign represents net capital outflow (largely foreign balances accumulated during wartime).

§§Balance of current items, cumulated over 1920-29 (from Schumpeter, *et al.*, *op. cit.*). Represents largely consumption of wartime accumulated balances.

‡‡Actual values deflated to 1905 base by use of Bank of Japan index of wholesale prices (Moulton, *op. cit.*, p. 437). Annual rate is simple average derived from period totals.

² Cf. H. W. Singer, "The Distribution of Gains between Investing and Borrowing Countries," *Papers and Proceedings of the Sixty-Second Annual Meeting, American Economic Association*, May, 1950. Also H. C. Wallich, *Monetary Problems of An Export Economy: The Cuban Experience, 1914-47* (Cambridge, Mass., 1950), especially chap. xii, sec. 3. The constricted pattern of foreign investment in the rubber and tin countries is set forth in H. G. Callis, *Foreign Capital in Southeast Asia* (New York, I.P.R., 1942). In regard to the colonial territories of Africa, the effects of Western enterprise in dislocating the native economies and perhaps even reducing the total net income of the native population are discussed by S. H. Frankel, *Capital Investment in Africa* (Oxford, 1938), especially chap. i.

in the last quarter of the nineteenth century serving as basis for much acceleration thereafter. The new pattern included rapid and increasingly thorough economic westernization, substantial industrialization, minimum social changes necessary for the economic and military undertakings, close collaboration between the governmental and the private sectors, and stubborn cultural conservatism. When foreign capital became an important factor, from 1897 onward, it was obtained by Japanese loan flotations abroad in accordance with internal needs and decisions; on the whole, it was not provided by foreign initiative.

The record of the inflow of foreign capital into Japan from 1868 to 1930 falls naturally into four principal periods: I—from the Meiji Restoration of 1868 to the close of the Sino-Japanese War in 1895; II—from 1896 to the eve of World War I; III—the war period and the immediate aftermath, to 1920; IV—the decade of the 1920's. During Period I foreign borrowing was initiated but was very limited and soon liquidated. During Period II there was a rapid expansion of foreign borrowing. Period III was marked by virtual cessation of capital inflows; indeed, the net flow was strongly reversed. During Period IV foreign borrowing was resumed, but was never carried to the same relative importance as in Period II and was marked by new features. During the thirties the foreign flotation of Japanese long-term loans entirely ceased, while the inflow of foreigners' direct investments was quite limited. These movements are summarized in Table VI.1, which gives both period totals (in current values) and annual rates (in deflated values).

The four periods are closely correlated with the major movements in the evolution of the Japanese economy over the same time span. The interval which has been designated as Period I was preoccupied with devising the framework of a modern economy upon a partly modernized agricultural base. For the first twenty years of this long initial period, full-scale industrialization was deferred, except for activities in such fields as transportation and pilot plants. Period II was above all a time of industrialization: construction of productive facilities, especially in the manufacturing field, and speedy utilization of these facilities in efficient production. During the third period, marked by the wartime boom in domestic and foreign trade, the expansion of productive facilities was continued and was greatly accelerated in some industries, but was surpassed by the rapid rise of output, as a result of very intensive operation of the installed capacity. Period IV was marked, on the one hand, by a more complex pattern of capital construction, and, on the other hand, by rationalization of industry; gaps in the industrial structure were filled, and the whole structure was adapted to the world economy in which Japan imported raw materials and exported low-grade, low-priced, finished goods.

This evolution was accompanied by a vast increase in the numbers of the population, which nearly doubled over the sixty-year span from 1870 to 1930. While industrial development was rapid, it provided only a

gradual relative shift of the labor force away from the primary occupations. As late as 1930 fully half the Japanese labor force was occupied in agriculture and fishing. In effect, the growth of manufacturing and services was able only to siphon off the increase in total population, leaving the absolute numbers on the land very nearly constant.³ At the same time, the cultivated acreage could not be expanded very much. Japanese failure to reduce substantially the man-acre ratio suggests the limitations of attempting to relieve agrarian distress in densely populated countries merely by enlarging the industrial demand for labor.

The relation of foreign capital to these industrial and social trends is summarized in the following propositions. These in turn are developed in the four corresponding sections below, dealing in detail with Periods I and II and more broadly with the subsequent eras.

1. In quantitative terms, foreign capital did not bulk very large over the whole span of Japan's development. However, the degree of dependence upon foreign assistance varied with the four successive stages of growth, and ranged from nil to substantial proportions.

2. The moderate scale of Japan's net dependence on foreign capital was made possible by the complex of incentives and pressures which minimized total capital requirements, promoted domestic saving and productive investment, and indirectly curtailed pressures on the balance of international payments. But these practices were limited by the poverty and immobility of an Oriental economy, as well as by the necessities of interdependence and sequence in the developmental process.

3. The recurrent economic strains of rapid development rendered Japan dependent upon external assistance for many years. The inflow of foreign capital was not successful by short-run standards, for it brought neither domestic stabilization nor a current international balance, let alone early liquidation of the debt. By developmental criteria, however, the inflow was successfully absorbed: the foreign resources served not only to break specific bottlenecks, but also to hold macroeconomic pressures within limits of tolerance until an advanced stage of development was reached.

4. Japan's foreign capital came predominantly in the form of governmental borrowing from private investors abroad. These general-purpose funds were better adapted than private direct investments to the changing sequences of modernization, the macro-features of the economic strains, and the long time span of the entire process.

These trends in the labor force have been derived from: (1) occupational estimates for the early years by Dr. S. Hijikata in *Shakai Seisaku Jiho (Social Reform)*, Sept., 1929, together with occupational registrations for 1872-76 reproduced by R. Ishii, *Population Pressure and Economic Life in Japan* (London, 1937), pp. 76-80; and (2) occupational distributions for 1920 and 1930 from the regular decennial census, as given by Ishii, *op. cit.*, p. 78.

RELATIVE MAGNITUDE OF THE FOREIGN-CAPITAL INFLOW

During the earliest stage of modernization, which is often presumed to be the most difficult stage of all,⁴ Japan's reliance on foreign funds was almost nil. Yet economic development during that period was substantial, and laid the foundations for later acceleration of industrialization. The national product grew distinctly.⁵ The labor force was relatively shifted

⁴ Cf. for example *The Colombo Plan for Co-operative Economic Development in South and South-East Asia* (Great Britain, H.M.S.O., Cmd. 8080, 1950), p. 11: "It is the early stages which are the most costly and difficult." Similarly Mordecai Ezekiel in Appendix I to F.A.O., *Report of the F.A.O. Mission to Greece, 1947*, p. 163: "Substantial foreign financing, as recommended in the body of the report, is essential to getting the development program started and well under way." Cf. also the similar statement by the Group of Experts in U.N., *Measures for the Economic Development of Under-Developed Countries* (New York, 1951), p. 88.

⁵ The statistical data on Japan's national product before 1930 are quite inadequate, and none of the various estimates can represent more than the general order of magnitude. Qualitative information together with the available series on physical production suggests that the rate of growth in output per capita advanced substantially from Period I to Period II, stepped up still higher during the wartime boom of Period III, and then settled back to a growth rate slightly above or slightly below the prewar rate. This pattern is in general accord with the pioneer national-income series roughly estimated by S. Hijikata, and refined by Colin Clark and others.

Quite a different pattern is presented in the recent estimates by Yuzo Yamada (*Nihon Kokumin Shotoku Suikei Shiryō*, Tokyo, 1951, p. 130) and the refinements on Yamada's figures by S. Tsuru and K. Ohkawa, "Long-Term Changes in the National Product of Japan since 1878" (International Association for Research in Income and Wealth, *Income and Wealth*, Series III, Cambridge, 1953, chap. ii). Tsuru and Ohkawa give the remarkably high rate of growth, per capita of the total population, of 4 per cent a year (simple average) from the first to the second decade of the interval 1878-97 (although their data taken by subperiods indicate rates of only 2 per cent up to the early 1880's, and only 3.2 per cent during the last decade of this period); following this period, they find a sharp deceleration during the fifteen years just preceding the World War I (exhibiting a growth rate of only 2 per cent a year), then a slight additional deceleration during the war years, and later a rapid acceleration (to a growth rate of 4.2 per cent a year) during the 1920's. This unexpected pattern seems dubious in the light of the imperfections of the data, the unavoidable assumptions and indirections of the calculation, the use of wholesale-price indices for deflating the aggregate current values, and the summarization of the findings by wide and regular intervals (quinquennia and decades) without regard to the historical trends and turning-points. More specifically, Tsuru and Ohkawa acknowledge that a cost-of-living index which they constructed showed "a much less steep trend than the wholesale price index, with the discrepancy as high as 35 per cent in earlier years" (*op. cit.*, p. 36); now if such a more gradual price trend is applied to their quinquennial figures for national income in current yen from 1893-97 to 1908-12, the result (after allowance for population increase) is a per-capita growth rate of 4.2 per cent a year, simple average, in contrast to Tsuru and Ohkawa's 2-per-cent estimate; and converted to growth per capita of the labor force (which advanced more slowly than the total population), the rate becomes approximately 5 per cent a year, simple average, or almost 4 per cent at compound growth.

Taking all these considerations into account, it seems reasonable to adopt for our Period II a rate of growth, per capita of the labor force, close to 4 per cent a year, compounded, and for Period I a rate substantially lower.

out of agriculture, but the absolute numbers occupied on the farms were rising during this period, and still constituted over 70 per cent of the labor force as late as 1897.⁶ The outstanding developmental activities were the transformation of economic institutions and attitudes, and the expansion and improvement of agriculture and other extractive operations; these activities overshadowed the exploratory ventures in industrialization.

The economy relied almost entirely on native resources, used directly or in exchange for imports. During the first few years of Period I, when a foreign-trade deficit prevailed, two moderate-sized loans were floated in London, totaling only ¥ 16.6 million in face-value (£3.4 million.)⁷ In addition, Japan received from abroad considerable short-term credits and a small amount of direct investments (largely the working capital of commercial firms). During the later years of this period, the current international balance shifted to a surplus. Practically the whole of the long-term loans, and probably most of the short-term credits,⁸ were liquidated by 1895, leaving virtually no foreign obligations.

The close of the Sino-Japanese War in 1895 marked a sharp reversal in Japan's international economic relations. The balance of merchandise trade swung from positive to negative. Foreign capital was now sought with growing eagerness. Within a few years a substantial foreign debt was built up. At the same time, invisible earnings rose rapidly, and foreign investments by the Japanese made their first appearance in noteworthy amounts.

The forces underlying these changes, aside from special and temporary factors, are to be found in a shift in the character and pace of development along two principal lines: acceleration of industrialization and expansion of armaments.⁹ The tempo of economic activity was well above the levels of Period I, and the relative shift of the labor force out of agriculture was continued.¹⁰ Total capital requirements outran domestic-

⁶ Based on labor-force estimates by Hijikata, *op. cit.*

⁷ The first loan was issued in 1870, the other in 1873. These items are valued as of the date of borrowing, as given in Japan, Department of Finance, *Financial and Economic Annual of Japan*, 1902, p. 28.

⁸ Cf. H. G. Moulton, *Japan: An Economic and Financial Appraisal* (Washington, 1931, reprint edition 1944), pp. 382-384.

⁹ For details, see the following section.

¹⁰ While the actual trends cannot be determined very exactly, the considerations set forth in n. 5 above suggest that the rate of growth of national product per capita advanced from Period I to Period II, and may have reached nearly 4 per cent a year, compound rate. The acceleration of production in particular industries, from the last years of Period I, is shown in physical terms by numerous statistical series, some of which have been aggregated in the Koide index of primary production (Y. Koide, "Hompō Genshi Seisanbutsu no Seisan Suryō," Nagoya Chamber of Commerce and Industry, *Nagoya Keizai Tōkei Geppo*, VIII, No. 4, May, 1936, Supplement) and in the Nagoya Commercial College index for manufacturing production (*Hompō Seisan Suryō Shisu Soran*, 1894-1931, Nagoya, 1933).

The shifts in the allocation of the labor force, according to the Hijikata estimates cited above, carried the agricultural share down to a little over 60 per cent

capital formation, and particularly outgrew the sources of foreign-exchange earnings which had supported economic development during the preceding period.

In 1897 the national government began a series of foreign bond flotations with an initial amount of ¥ 43,000,000 (a portion of a domestic loan sold abroad). This was followed by a larger loan in 1899 (¥ 97,630,000) and a huge volume of issues (aggregating over one billion yen) during the war years 1904-5, and thereafter a number of foreign issues of individually smaller amounts (in 1906, 1907, 1910, 1913), along with some sales abroad of domestic issues. Concurrently with these inflows went conversion and amortization of earlier loans and some repatriation of foreign holdings. At the end of 1913 outstanding foreign indebtedness of the national government stood at ¥ 1,599,205,000.¹¹

In addition to these debts of the national government, foreign debts were incurred by municipal governments and by nominally "private" corporations. Borrowing by the former began in 1899 and rose steadily over the years to a total of ¥ 177,147,000 outstanding at the end of 1913. Foreign borrowing by Japanese companies (chiefly semigovernmental corporations) began in 1905. These flotations increased over the years, along with some foreign purchase of domestic corporate issues. The total of foreign holdings of Japanese corporate obligations outstanding at the end of 1913 was ¥ 193,332,000.

The sum (face-value) of these funded borrowings by the national government, by municipal governments, and by corporations, net of conversion and amortization payments during this period, and net of the small amount outstanding at the end of 1895, came to ¥ 1,967 million. However, the actual yield to Japan was substantially reduced by discounts and commissions.¹² The actual yield from the various categories of loans is thus calculated at ¥ 1,762 million.

Another principal category of foreign capital available to Japan was the sums of foreign exchange obtained by Japan from China through the

of the total by 1913. This figure indicates a decline of .7 percentage points a year during this period, compared with an annual rate of perhaps .3 or .4 during Period I.

¹¹ The details may be found in Moulton, *op. cit.*, pp. 376, 379.

¹² The rough estimate by Moulton, *op. cit.*, p. 390, that actual yield was about 90 per cent of face value, is confirmed by a detailed computation based on data in Japan, Department of Finance, *Financial and Economic Annual*, 1909, 1914, and 1917, *Japan Year Book*, 1918, and U. Kobayashi, *War and Armament Loans of Japan* (New York, 1922). The average yield percentages were as follows:

National government loans	88.9%
Municipal loans	92.9%
Private corporations loans	92.3%

Weighted average 89.6%

payment of the indemnity following the Sino-Japanese War and the indemnity following the Boxer War. The former transfer yielded ¥ 360 million, paid in London in sterling during 1896-98; the latter, paid in annual installments with interest at 4 per cent, yielded Japan ¥ 24 million from 1902 through 1913.¹³

These inflows of loan and indemnity funds were augmented by relatively small amounts of direct investments by foreigners, totalling perhaps ¥ 100 million during this period.¹⁴ The inflow total was partly offset by additions to Japanese specie holdings abroad¹⁵ and Japanese investments abroad.¹⁶

The net balance of these capital movements is difficult to determine because of the lack of reliable data on the invisible items in the international accounts for the early years of this period and the inadequacy throughout the period of the data on international capital movements other than sales of Japanese securities to foreigners. However, for the subperiod 1904-13 data are available for drawing up a balance of payments on current account. This balance shows a deficit of ¥ 1,082.7 million by cumulation of annual deficits over the years in question.¹⁷ This figure will be taken as the most

¹³ Moulton, *op. cit.*, pp. 383, 387.

¹⁴ This is the estimate by Moulton, p. 390, on the basis of 1913 profit remittances capitalized at 8 per cent. Mrs. Gordon (in E. B. Schumpeter, *et al.*, *The Industrialization of Japan and Manchukuo, 1930-40*, New York, 1940, pp. 919, 922) suggests a lower figure, namely ¥ 70 million, on the grounds that the so-called "profit remittances" included some personal payments by Japanese to foreigners, and she estimates these at about two-thirds of the volume in the nineteen-twenties (when this category was reported separately). It seems likely that some such remittances were being made by foreign experts, teachers, etc. sending home part of their salaries, but Mrs. Gordon's adjustment may easily be excessive. Since in addition the 8 per cent rate of capitalization is itself uncertain, and since independent evidence reports a number of substantial direct investments during these years, it seems best to adhere to the round figure of Moulton's estimate.

¹⁵ Specie holdings abroad rose by ¥ 227 million from 1903 to the end of 1913 (Moulton, *op. cit.*, p. 412; data are not available for the years prior to 1903).

¹⁶ These investments as of 1913 have been variously estimated. Mrs. Gordon (*op. cit.*, pp. 921-922) adopts a Bank of Japan estimate of ¥ 461.0 millions (including ¥ 100 million book-value of the South Manchurian Railway, which Japan acquired in 1907 by treaty without any international payments; cf. Moulton, *op. cit.*, p. 391). Moulton's estimate (excluding this railway) is ¥ 550 million (*op. cit.*, pp. 391-392), based on admittedly inadequate data on invisibles and capitalization rates. A partial estimate by C. F. Remer, cited and adjusted by Moulton (*ibid.*), comes to ¥ 529 million. After comparing the data on current items with the information on capital movements, it seems reasonable to set the figure for Japanese foreign investments in 1913, excluding the South Manchuria Railway, somewhere between ¥ 360 million and ¥ 500 million.

¹⁷ See Table VI.2. The figures refer to the Japanese Empire, or yen-bloc, including the colonies along with Japan Proper. The merchandise trade figures are open to some questions, but the factors tending toward understatement of the exports were probably offset largely by the understatement of imports due to smuggling.

TABLE VI.2
BALANCE OF PAYMENTS ON CURRENT ACCOUNTS
JAPANESE EMPIRE, 1881-1936
(SUMMARIZED BY PERIODS)
(¥ MILLIONS, IN CURRENT VALUES)

	1881-85*	1896-1903*	1904-13†	1914-19†	1920-31†	1932-36†
Visible account: Balance of merchandise and specie (other than gold)‡	72.3	-354.5	-706.5	1,197.5	-4,517.8	-2
Invisible account:						
Net interest and dividend payments	-8.1	-41.4	-636.9	-313.6	-756.4	-511.6
Net income on undertakings and services abroad			274.2	441.3	1,262.6	880.7
Net freight receipts			252.4	1,356.7	1,650.4	741.9
Net insurance payments			-17.9	9.8	83.7	66.9
Net tourist expenditures, etc.			23.5	66.5	133.1	93.9
Net government payments abroad			-329.7	165.5	-388.7	-615.9
Miscellaneous			-1.8	111.3	128.5	159.4
Balance of invisibles			-435.9	1,637.5	2,113.1	815.3
Specie movements‡	7.6	-62.3	59.7	-603.8	222.8	132.9
Balance on current account			-1,082.7	2,431.2	-2,181.9	712.1

*Adapted from H. G. Moulton, *Japan: An Economic and Financial Appraisal* (Washington, reprint ed., 1944), pp. 379-385; known items only.

†Adapted from E. B. Schumpeter, *et al.*, *Industrialization of Japan and Manchukuo, 1890-40* (New York, 1940), end papers, Table III. Slight differences between balances and detail sums are due to rounding.

‡For 1881-1903, the visible account refers to merchandise trade only, all specie movements being listed separately below. For 1904-36, specie other than gold is included in the visible account, while gold movements only are listed separately below.

precise available measure of the net capital inflow during this subperiod.¹⁸ In turn, this figure, extended by means of the data on known capital movements during 1896-1903,¹⁹ suggests a total net inflow of about ¥ 1,500 million during the whole of Period II.

This inflow of foreign capital was quite substantial relative to the scale of the Japanese economy at that time, in terms of measures based on data of varying reliability. The net financial inflow of ¥ 1,082.7 million during 1904-13 represented excess imports of goods and services amounting to one-sixth of total imports.²⁰ Again in financial terms, the total

¹⁸ Efforts to check the balance-of-payments figure by means of capital movements during the same years do not yield an exact confirmation, but the discrepancies do not exceed 10 per cent of the current deficit figure. The balance-of-payments approach involves less guesswork than the other in this instance, and has been adopted here without adjustment for the apparent discrepancies.

¹⁹ This calculation is fairly well confirmed by data on known items in the current international transactions (Moulton, *op. cit.*, pp. 383-385 for Japan Proper and *Financial and Economic Annual of Japan*, 1905, pp. 178-179, for Formosa) after allowance for invisible income.

²⁰ Based on import data in Schumpeter *et al.*, *op. cit.*, end-papers, Table I.

foreign borrowing by the national government during this period provided about one-sixth of its revenues from all sources.²¹

To arrive at a measure of the foreign contribution in terms of real goods and services, it is necessary to make allowance for the net remittances of interest, dividends, and profits on the foreign investments; these reduce the net financial inflow figure by one-third.²² Deflation to 1905 values of the yen brings the net real inflow on an annual basis to ¥ 69.3 million. The relative significance of this figure depends upon comparisons with net real-capital formation and net real income. The data for calculating these two magnitudes are not entirely adequate, but permit an estimate of the probable order of magnitude.²³ In these terms, the net real foreign contribution amounted to some 12 per cent of the entire net real-capital formation in Japan during this period, but came to about 20 per cent when set against the capital formation of "productive" type only. Similarly, the net real foreign contribution appears to have been about 2.3 per cent of the average national income during this period, while the whole net financial inflow (gross of foreign investment service) came close to 3 per cent of the average national income.

The events of World War I carried Japan temporarily from the position of a struggling debtor to the rather inappropriate status of an international creditor. The war brought the favorable balance of trade which Japan had been unable to achieve by her own efforts to that date, at the same time as it brought an industrial boom. However, it also

²¹ Based on fiscal data in *Financial and Economic Annual of Japan*, 1915, pp. 34-35, and in Moulton, *op. cit.*, p. 161.

²² Based on data on invisible items in Table VI.2 above.

²³ An estimate of real-capital formation may be obtained from semiofficial calculations of national wealth in 1905 and in 1913, as reproduced by K. Mori ("Estimate of the National Wealth and Income of Japan Proper" in *Bulletin of the Institut International de Statistique*, Tome XXV, Vol. 2, 1931). These calculations employed crude methods, referred to Japan Proper rather than to the whole Empire, and differ in several ways which limit their comparability; the measurement of the increments is probably more reliable than the absolute values. Certain categories should be eliminated, chiefly nonreproducible resources whose increase in value (obtained by capitalization of income-yields) reflects not merely various capital additions but to a much greater degree represents more intensive and efficient use of the resource. After the indicated adjustments, the increment in real wealth during 1905-13 comes to ¥ 4,635 million in 1905 prices, or ¥ 580 million a year. Exclusion of consumer durables (including housing) and unallocable categories yields a figure of ¥ 2,793 million, or ¥ 349 million a year, representing the closest available approximation to the increment in real productive capital (industrial capacity and business inventories, plus armament, which unfortunately cannot be properly excluded). This measure is roughly corroborated by the "investment" estimates, computed by entirely different methods using financial data, in Eugene Staley, *World Economic Development* (Montreal, 1944), chap. iv, Appendix by Robert W. Tufts.

For the national income, the estimates by Tsuru and Ohkawa, *op. cit.*, have been adopted, although they may be somewhat high. The average of their figures for 1903-12, deflated to 1905 prices, comes to ¥ 3,043 million.

brought or intensified many internal economic problems, especially a deferred inflation which burst forth after the war's end. The result during 1914-19 was a net foreign surplus on current account of ¥ 2,431.2 million.²⁴ Since this amount, accumulated in specie holdings and other assets abroad, far exceeded the outstanding external debt, Japan was now in a net-creditor status vis-à-vis the rest of the world.

With the end of the war, Japan's current international account reverted to a deficit position. Economic growth was uneven but on the whole was rapid.²⁵ The foreign balances built up during the war were drawn down and nearly extinguished during the twenties, partly in reducing the old foreign debts (to a low point in 1922), partly in covering a portion of the current deficits, and partly in importing gold to strengthen the holdings at home. The deficit thus remaining in the current accounts was covered finally by new inflows of foreign capital. By 1929 Japan was once more an international debtor. However, the net foreign debt outstanding in 1929 was much smaller in current values than it had been in 1913.²⁶ It was still smaller relative to the national income, which in current values had more than tripled between these two dates, and it was in a measure offset by a rise in the specie holdings at home.²⁷

THE DOMESTIC PERFORMANCE

The basic economic situation of Japan would hardly suggest an ability to avoid heavy dependence on foreign capital. At the very outset of modernization, the population was already pressing on the means of subsistence. During subsequent years, the reduction in the high death rate, together with the persistence of the high birth rate, resulted in a vast natural increase. Japan's endowment in natural resources and in accumu-

²⁴ See Table VI.2.

²⁵ Real national income per capita rose during the 1920's at the rate of 4.2 per cent a year, simple average (equivalent to 3.7 per cent at compound rate), according to Colin Clark's calculations (*The Conditions of Economic Progress*, 2nd ed.; London, 1951, pp. 136-137) derived from Hijikata's estimates, and also according to Tsuru and Ohkawa's computations (*op. cit.*).

²⁶ Net foreign indebtedness (including direct investments) in 1913 was approximately ¥ 1,432.5 million (according to estimate by Mrs. Gordon, in Schumpeter *et. al.*, *op. cit.*, p. 922, adjusted to exclude the South Manchurian Railway, for which no cash payment had been made), and in 1929 was about ¥ 784 million (according to estimate by Moulton, *op. cit.*, p. 403, adjusted to exclude the same South Manchurian Railway item, and also adjusted to include the specie balance of ¥ 114 million still held abroad in 1929, according to data on specie movements not available to Moulton).

²⁷ Approximate tripling is shown by Tsuru and Ohkawa's figures (*op. cit.*, Table I) in current yen, while Hijikata's figures (cited above) indicate a quadrupling over the same period. There was a ¥ 955 million net addition to specie holdings at home between 1913 and 1929. Most of this represented foreign balances brought home. While part of these specie holdings was impounded in the reserves against note issue and credit extensions, a large portion should be treated as at least a potential international asset. In this sense, Japan was very nearly square with the world in 1929.

lated wealth was poor. The external coincidences which favored Japan's progress could not have been turned to account without development of local facilities. The Japanese national aims included not only industrialization but also costly expenditures of the kind usually classed as nonproductive, particularly war and armament outlays. All these circumstances would seem to imply for Japan in the early stages of development a need for foreign capital at least as great as is frequently assumed nowadays for comparable countries.²⁸ The explanation of the actual Japanese record is found largely in the remarkable domestic performance, especially during the crucial years up to World War I.

Total Capital Requirements

The character of Japanese economic development, as to fields of investment, locations, techniques, and rates of operation, was on the whole appropriate, if not actually optimal, with respect to the resources and alternatives available at the successive stages of the evolution. The composition of investment tended to minimize the total amount of capital required for a given rate of progress. Capital intensity was restrained not only in the static sense of limiting the ratio of invested capital to planned (ultimate) output, but also in related temporal senses: shortening the gestation period of new industries and new firms (hastening their arrival at the optimum, or at least at the break-even rate of operation), and simplifying the necessary sequences (the priorities which cause one industry to wait upon the supply or markets forthcoming from another). These patterns were only in part deliberate or planned; in large part they resulted from the adaptations of the private economy, led by a handful of industrial innovators (especially the founders of the zaibatsu houses) and guided at crucial points by the national government. Nevertheless, physical obstacles and social resistances to progress were great, especially during Period I. While the theoretical needs for capital, as measured by the lack of modern facilities, were enormous, the occasions for practical applications of capital were slow to evolve.

For many years the increases in national product were derived chiefly from agriculture and other extractive activities, especially sericulture. Expansion in these fields in the first few decades was largely a matter

²⁸ A very high level of foreign dependence is indicated by the U. N. Report, *Measures for the Economic Development of Under-Developed Countries* (New York, 1951), Table 2, p. 76. This report assumes economic growth at the rate of a 2-per-cent annual increase in national income per capita (i.e., about the same order of magnitude as may have prevailed in Japan during Period I, and well below the probable rate in Japan during Period II). The U. N. group estimates that the economic development of Far Eastern countries at this rate would require external financing for nearly 90 per cent of the total capital requirements, while South Central Asia would require almost 80 per cent in foreign capital. In the former area, such external aid would amount to 26 per cent of current national income. On p. 79, the authors of this study temper the stated requirements in view of the potential rise in domestic saving.

of adopting scientific practices and utilizing idle labor time and marginal productive capacity, with the assistance of relatively small amounts of new capital. Some of the steps were virtually cost-free (such as more intensive and effective application of family labor to the land and to irrigation systems). Others used working capital on a seasonal revolving-fund basis (e.g., increased application of fertilizers). Introduction of new seed-types from abroad was a nonrepetitive outlay, as native organizations were formed to spread the innovations. Even the services of foreign experts brought in by the government were used largely to train native extension workers in agriculture and native specialists in other fields, who soon greatly outnumbered their teachers.²⁹ Likewise, the expansion of mining yielded a high-value output relative to capital costs for installations, which were of simple type relying largely on hand labor.

The silk industry, Japan's largest single source of foreign-exchange earnings, was a remarkable instance of low capital-intensity. The raising of cocoons is largely a marginal operation, both as to area which can be devoted to mulberry trees, and as to the work of the agricultural labor force (it is largely a supplementary occupation). Hence its expansion did not detract from any previous production, but was virtually all net addition. The yield was increased still further by improvements in quality, which were very low in cost: e.g., replacement of yellowish cocoons with white ones, and better feeding of silkworms. On the other hand there were a few moderately costly steps, chiefly the introduction of modern machinery to give larger extraction of silk per cocoon even when inexperienced hands were used. Between the beginning of Period I and the end, the reeling of raw silk quadrupled. But as late as 1893 more than half the output was reeled by hand, not by machine. It was not until total demand outran productive capacity under the old technology and costs rose at the time of the Sino-Japanese War that the introduction of reeling machines was much stimulated.³⁰

In the industrial field, heavy industry was deferred until well into the twentieth century, with certain exceptions connected with external economies or with military security. The advantages of factory production for many kinds of goods were recognized, but simple and inexpensive equipment was sought, including secondhand machinery and even some obsolete types. Applications of labor relative to capital were stressed,

²⁹ To be sure, many mistakes were made and considerable resistance was encountered among the peasants, but all were overcome by persistence and by adaptation to local conditions. See S. Okuma, *Fifty Years of New Japan* (London, 1909), pp. 568-569. Also, cf. J. E. Orchard, *Japan's Economic Position* (New York, 1930), pp. 91, 104.

³⁰ Details of the silk industry taken from A. Stead, *Japan by the Japanese* (London, 1904); S. Ueyehara, *The Industry and Trade of Japan* (London, 1926); Mitsubishi Economic Research Bureau, *Japanese Trade and Industry* (London, 1936); Y. Hattori, *The Foreign Commerce of Japan since the Restoration, 1869-1900* (Baltimore, 1904); G. C. Allen, *A Short Economic History of Modern Japan, 1867-1937* (London, 1946).

within the minimum requirements of modern machine technology. In turn, the wage bill was held down not only by the prevailing low real standard of living but also by utilizing marginal labor time and by recruiting women and children in place of male workers. Equipment was run at high speeds and in multiple shifts. The supply of raw materials was improved as to quality, standardization, and regularity of delivery. Extreme urban concentration was avoided.³¹ Small-scale units, considerably decentralized, were integrated into modern industrial operations as well as dovetailed into the seasonal pattern of agriculture.³² In these and other ways, the total overhead for a given volume of production was minimized, and output was maximized at the earliest possible date. The cotton-spinning industry, which was by far the largest manufacturing category during Periods I and II, is the prime example of these practices.

Nevertheless, these practices had inevitable limitations of the intra-industry type, even in cotton spinning.³³ More serious still were the heavy capital requirements for social overhead, both interindustrial and communal.

The trends of investment in large-scale enterprise are shown in Tables VI.3 and VI.3A. The total volume multiplied nearly tenfold (in current values) from 1896 to 1913 (while the price level rose only some 60-70 per cent). It is evident that as early as 1896 transportation held the major share of the total, while second rank went to manufacturing, predominantly textiles. By 1913 the share of transportation showed a small decline and of manufacturing a small increase, but the most significant change was the rapid rise of shares of certain heavy industries (engineering, chemicals, electricity, gas) within the "manufacturing" category.³⁴ Like transportation, these industries were highly capital-intensive, with

³¹ As late as 1913, nearly three-fourths of the population dwelt in "rural communities" (R. Ishii, *Population Pressure and Economic Life in Japan*, London, 1937, pp. 69-71).

³² In Japan many factors, both technologic and commercial, were peculiarly suited to small-scale organization. While most of the small entrepreneurs were not able to earn more than a meager living, they succeeded in meeting or discouraging competition by large-scale establishments in many fields down to the eve of World War II. See further in E. P. Reubens, "Small-Scale Industry in Japan," *Quarterly Journal of Economics*, LXI (Aug., 1947), 577-604, especially pp. 582-588.

³³ As J. H. Adler has pointed out: "True, in industries which are characterized by the prevalence of continuous equal output curves, it is more economical to utilize relatively more labor and relatively less capital if the cost of labor is low relative to that of capital. But whether economic theorists like it or not, it seems that the equal output curves of most industries are discontinuous, and therefore a variation of the capital-labor ratios is possible within narrow limits only" ("The Fiscal and Monetary Implementation of Development Programs," *American Economic Review*, XLII, *Proceedings*, May, 1952, p. 589).

³⁴ To be sure, the heavy industries other than the public utilities did not add up to a very large share of the total investment outstanding at this time. Engineering and chemicals, together with food and drink, mining and petroleum, totaled only about 15 per cent of all company capitalization and hence a still smaller share of the economy's entire capital investment.

TABLE VI.3
CAPITAL INVESTMENT* OF COMPANIES† IN JAPAN, 1896, 1913, AND 1929
BY INDUSTRIES
(AMOUNTS IN ¥ 000's)

CATEGORY	1896§		1913‡		1929**	
	AMOUNT	PER-CENTAGE	AMOUNT	PER-CENTAGE	AMOUNT	PER-CENTAGE
Agriculture.....	1,745	0.6	29,150	1.0	255,225	1.1
Commerce.....	31,082	10.1	494,212	16.9	5,111,963	22.9
Manufacturing‡.....	78,602	25.4	786,602	26.9	7,902,493	35.7
Mining and petroleum.....	23,235	7.5	180,981	6.2	987,037	4.4
Transport‡.....	174,354	56.4	1,436,835	49.0	7,988,442	35.9
Total.....	309,018	100.0	2,927,780	100.0	22,274,660	100.0

*Includes paid-up capital, reserves, and debentures.

†Includes stock companies and partnerships, also government-owned enterprises in transportation; excludes individual enterprises, also excludes banking companies.

‡Includes public utilities (other than transportation), also shipbuilding.

§Includes government-owned enterprises in transportation, valued at cost of construction adjusted by financial valuations where available. This inclusion is necessitated by the nationalization of the railways between 1896 and 1913.

§Sources: Japan, Department of Finance, *Financial and Economic Annual*, 1901, pp. 22-23; 1905, pp. 70-71; 1908, pp. 88-89. The category of "Banking" has been excluded from the data, and the category of "Manufacturing and Mining" has been split, in accordance with the percentages indicated in S. Ueyehara, *Industry and Trade of Japan* (London, 1926), p. 28.

‡Sources: Japan, Department of Agriculture and Commerce, *Statistical Report*, 1914, pp. 164-168; and Department of Finance, *Financial and Economic Annual*, 1914, p. 83, and 1915, p. 153.

**Sources: *Financial and Economic Annual*, 1933, pp. 104-107; and 1938, p. 98.

TABLE VI.3A
PERCENTAGE BREAKDOWN OF CAPITAL INVESTMENT IN JAPANESE
MANUFACTURING COMPANIES, 1893 AND 1913*

	1893	1913
Textiles.....	56.2%	21.1%
Engineering (including shipbuilding).....	6.4	9.3
Chemicals (including paper mfg.).....	19.3	14.2
Food and drink.....	7.3	10.0
Electricity.....	5.0	30.3
Gas.....	...	9.8
Other.....	5.8	5.3
	100.0	100.0

*Based on data in S. Ueyehara, *The Industry and Trade of Japan* (London, 1926), p. 32. Since this source covers only the paid-up capital of limited companies and provides data for 1893 instead of 1896, the absolute totals for manufacturing in the source fall short of the corresponding amount in Table VI.3 (i.e., Ueyehara gives only ¥ 656,567 million in 1913, as against ¥ 786,602 million in the preceding table). While Ueyehara's omissions may distort the pattern somewhat, the percentage distributions probably are reasonably representative.

long gestation periods, and unavoidable dependence upon the slow and uneven growth of demand for their output. They were necessary, however, not only for military and prestige reasons, but also for economic reasons, as basic facilities serving subsequent stages of development.³³

³³ While transportation and power are necessarily local, the case for some of the other heavy industries is not so clear. The Japanese shipbuilding industry, which

Virtually all of the new industries, including even the textile field, remained dependent upon imports for most of their capital equipment and for a large part of their construction materials.

Japan's natural resources of minerals and potential arable land, which had provided important net increments in national income and exports during Period I, were so slight that difficulties were soon encountered. The growth of agricultural output slackened noticeably after 1900.³⁶ Most minerals, aside from coal, sank to relatively minor importance,³⁷ and at best required elaborate capital installations to expand their yield. Similarly, expensive development was increasingly necessary to make use of other Japanese resources, among which should be counted the temperate climate, plentiful water power, access to the sea, and the linguistic, ethnic, and cultural homogeneity of the population. Notable efforts were devoted to building up, from very low initial levels, the systems of education, health services, agricultural extension and conservation work, research and experimental facilities, and the like. Some services, like commerce, which are usually considered to turn over capital rapidly, entailed substantial additions to inventories. Accumulation of consumer durables (mostly dwellings, home furnishings, and clothing) was likewise substantial,³⁸ but would have been difficult to reduce in view of the already strenuous rate of social saving, the need for real incentives, and the essentiality of some urban housing.

The large outlays for war and armaments amounted to perhaps 8 per cent of the average national income during 1904-13, and over twice the volume of net foreign-capital inflow during those years.³⁹ This ex-

contributed to the important earnings of foreign exchange through shipping services, appears to have benefited from the domestic availability of steel members and marine engines; cf. U'yehara, *op. cit.*, p. 233. The course of Japanese industrialization suggests that even in heavy industries few of the initial difficulties will prove permanent if enough time is given for shake-down, training, expansion to optimum size, and development of supplying and consuming industries. On the other hand, the steel industry in Japan Proper and the sugar industry in Formosa for many years showed high costs and depended on subsidies and tariff protection.

³⁶ Based on the Koide index of agricultural production ("Hompō Genshi Seisanbutsu no Seisan Suryō," *Nagoya Keizai Tokei Geppō*, Vol. VIII, No. 4 [May, 1936], Supplement).

³⁷ Based on data in *Financial and Economic Annual of Japan*, successive numbers, 1900-15.

³⁸ The national wealth figures, cited above, suggest that consumer durables accounted for perhaps 30 per cent of the total wealth increment during Period II, while inventory-accumulation by business firms accounted for another 20 per cent.

³⁹ The rapid rise of military outlay is shown in the following total of war and armament expenditures by periods (in current yen):

1877-93	¥ 352.3 million
1894-1903	1,072.6 million
1904-13	3,406.0 million

(based on data in G. Ono, *War and Armament Expenditures of Japan*, New York, 1922, pp. 106-109, after correction for overlapping years and errors in addition).

penditure absorbed resources which might in principle have been available for economic purposes. Indeed, some analysts have contended that by eliminating the arms outlay Japan could have maintained the same pace of economic development without relying on external aid. In reality, however, the interrelations between the military effort and the economic activities, in Japan as in other countries, were far-reaching and difficult to segregate. Analysis in terms of simple diversion of resources may hold for virtually stationary economies, whether advanced economies in a state of full employment, or backward economies in a condition of inelastic supply and virtual stagnation. But in a developing economy like Japan's during the period in question, the economic parameters are not given or stationary, and the military outlay is itself an important determinant of the expansion of productive capacity as well as a burden upon current income at any given date.

Economic strength was desired partly as a basis for military power, and vice versa.⁴⁰ Military concerns contributed directly to government interest in, and support of, transportation systems and heavy industry. Some of the expansion in these fields was undoubtedly premature or actually wasteful, in terms of then-current economic advantage. Yet the magnitude, outside of transportation and public utilities, was not large, as noted above, and the whole effort did provide important external economies for the industries which predominated in the Japanese economic structure. Other forms of governmental assistance to industry, agriculture, commerce, and finance were in many cases stimulated by military concerns, although occasionally restricted, or directed into uneconomic fields. Most conspicuous were, on the one hand, the initiative of the government in securing foreign loans, chiefly on the occasion of war preparations or actual hostilities; and on the other hand, the fervor and stimulus given to the entire economy by war preparations and postwar booms. Considerably less than half the net inflow of foreign funds went to cover direct military expenditures abroad.⁴¹ It is evident that the rising military expenditure

These figures, deflated for probable exaggeration of the "real" costs, indicate an average annual military outlay of ¥ 250 million during the second half of Period II. In calculating the ratio to national income, Tsuru and Ohkawa's figures showing an average national income of ¥ 3,174 million (in current yen) were used.

⁴⁰ Cf. J. E. Orchard, *Japan's Economic Position*, p. 231: "Wars and the fears of wars have played an important part in bringing Japanese manufacturing industries to their present state of development. Industrialization was begun as a weapon against possible aggression from a foreign nation, and each of the three wars in which Japan engaged in the modern period—the war with China in 1894-1895, the Russo-Japanese War of 1904-1905, and the World War—was a powerful stimulus to industrial expansion."

⁴¹ During the war years 1904-5, the principal items of direct military expenditures abroad were included in the ¥ 280 million total of Government Payments Abroad, and probably constituted nearly the whole of this category. For peacetime the aggregate over 1906-13 may have been about ¥ 120 million (estimated at 60 per cent of Government Expenditures Abroad in 1907-13, and 80 per cent

was accompanied by a rising national income, expanding productive capacity, fuller utilization of the labor force (otherwise underemployed, especially in agriculture), and strenuous social saving (largely under patriotic influences). In addition, the military affairs made certain specific contributions to economic affairs, by way of indemnities, territorial acquisitions, abrogation of the old "unequal treaties," avoidance of colonial status, and rising prestige which facilitated foreign borrowing, commercial negotiations, and general acceptance into the ranks of modern nations. Fortunately for Japan, none of her wars until World War II were fought on her own soil.

To be sure, armament expenditures are not the most efficient means of promoting economic development, any more than wars are the most desirable way of settling international conflicts. But it would be unhistorical to suppose that the Japanese military effort could have been eliminated, and probably chimerical to suppose that if eliminated it would have been replaced by an equally large and vigorous civilian effort. Finally, the fact that the demand for foreign capital was greatly stimulated by the military program provides no basis for the converse proposition that little or no foreign capital would have been needed if the armament outlay had somehow been eliminated without reducing the rate of economic growth.

Investment in most of the basic facilities and social-overhead activities obtained its reward from the external economies they yielded, but did so only over the long run. On the other hand, delay in making such investments generally left cultural resistances and physical bottlenecks which hampered social and economic mobility. Similarly, the broad range of Japanese investment insured a degree of "balanced" growth,⁴² but correspondingly enlarged the capital requirements. In a more general sense, capital needs were kept high by the fact that the elasticity of supply in most industries was very low. Productive capacity for a great many items in domestic or foreign demand was generally utilized to the full, or at least to the maximum permitted by bottlenecks existing elsewhere in the line of production and marketing. To expand output meant lifting the productive ceiling, i.e., promoting industrialization, with all its burden of capital investment.

in 1906). The total of the wartime plus the peacetime payments abroad on direct military account thus falls far below the large sums borrowed abroad during these years: less than 40 per cent of the net foreign-capital inflow of ¥ 1.082 million, and a much smaller percentage of the gross inflow.

⁴² The importance of "balance" between agriculture and industry, and among industries, is to be found not merely in interindustrial transactions, but also in the creation of effective consumer demand on a front broad enough to absorb most if not all of the production of a new industry approaching optimum size. Cf. Ragnar Nurkse, "Some International Aspects of the Problem of Economic Development," *American Economic Review, Proceedings*, May, 1952, 571-572.

Domestic-Capital Supply

To meet her total capital requirements, Japan possessed a modest amount of accumulated wealth and a relatively high marginal propensity to save. Certain hoards of treasure had been accumulated during the preceding centuries of seclusion, but fell far short of the fabled wealth of the Orient. Disharding played a vital role in balancing the international accounts during the period 1873-80. By the end of the century, however, these hoards appear to have been well-nigh exhausted for all practical purposes of financing international transactions.

Current saving was remarkably high in view of the low levels of Japanese national per-capita income. The rate of real domestic net saving (including housing and other consumer durables) moved up from almost negligible proportions in the premodernization era to a level which may have been as high as 17 per cent of the national income during Period II (although only about 9.2 per cent if consumer durables and unallocable categories are excluded from the volume of "real saving").⁴³ This performance may be traced to a relatively low marginal propensity to consume, operating upon a national income which was rising rapidly, although it remained far below Western levels. The resulting savings were effectively mobilized in channels of productive investment, as determined in large measure by the channels of the saving itself.

Four principal factors are found governing these processes of capital formation. First and basic was the trend of total and per-capita national income, whose expansion gave the society a margin over traditional consumption. Secondly, the skewed distribution of income directed a large part of the national increment away from wage earners, farmers and other small entrepreneurs, and the traditional *rentier* classes, in favor of the upper-income brackets of business operators. The principal channels here were monopsonistic crop markets, high land rents, low wages lagging behind productivity (although somewhat outrunning retail prices), usurious interest rates on small loans, and the secular inflation of price levels. Thirdly, the structure of taxation was heavily weighted with land taxes and excises, while income taxes were negligible; this structure tended by regressive incidence to curtail mass consumption, and by favoring industrial incomes tended to promote investment in the new sectors. A final factor was the devotion to thrift and a long-term outlook, prevalent in all classes but especially important in the upper-income brackets which were in a position to practice those values extensively.⁴⁴

⁴³ These rates are derived from above-mentioned computations of the net increment in real capital (less the foreign contribution) and the Tsuru and Ohkawa estimates of national income. As already indicated, these data are subject to wide margins of error.

⁴⁴ Voluntary savings by small-income receivers were not lacking. After a slow start in Period I, small savings expanded rapidly in Period II, as shown by deposits in savings banks, the Postal Savings system, co-operative credit societies, mutual loan societies, and life insurance. But even here, middle-class elements had a disproporti-

The mass toleration of this economic squeeze may be traced ultimately to population pressure, lack of organization, traditional docility, and patriotic fervor. At the same time, the Japanese masses were substantially insulated from the magnetism of higher living standards elsewhere; the "demonstration effect" (to use Duesenberry's apt term)⁴⁵ was far weaker in Japan than it is in the world generally today. But a more positive influence was the fact that not all the gains in national product were siphoned into savings. The actual improvement in levels of living was substantial.⁴⁶ For short periods the Japanese people were willing to bear a very high level of sacrifice, as exhibited particularly during the years of the Russo-Japanese War and World War I. But when the sacrifice was prolonged and passed from relative to absolute, there were substantial expressions of rebellion, as in the famous "rice riots" of 1919.

The income flow concentrated and channeled by the foregoing institutions was in great part saved and invested by the larger entrepreneurs. Taxes on personal incomes and on corporate profits were very low. Land taxes were not very burdensome to the few great landlords, who were in a position to evade taxes, raise rents, and hold their crops for the most profitable market. Landlords' rents and corporate profits were not on the whole retained in the particular enterprise; the greater part was usually drawn out with little regard even for adequate depreciation reserves.⁴⁷ At the same time the securities market was not well developed for private issues, and government obligations were limited in volume as a matter of policy. Yet liquid funds did not go chiefly into speculation, hoarding, or lavish consumption, as might be expected on the basis of experience with similar economic structures in other underdeveloped countries.⁴⁸

Most of these funds were either devoted to direct investment in new enterprises and new fields, or—in the absence of a developed securities market—were deposited in the banks, which in turn made loans for long-term as well as short-term purposes. Japanese banking was closely linked

ate share (data from *Financial and Economic Annual of Japan*, 1902, pp. 94-95, 102; 1913, pp. 130, 149; also Moulton, *op. cit.*, p. 477).

⁴⁵ J. S. Duesenberry, *Income, Saving and the Theory of Consumer Behavior* (Cambridge, Mass., 1949), p. 27.

⁴⁶ Cf. the following: "It is generally believed by those who have observed the economic development of Japan during the last sixty years that the standard of living of the people was steadily rising for many years before the Great War, that it made a striking upward jump during the war-boom years, and that, in more recent times, it has become difficult to maintain this higher level" (T. Uyeda, *The Small Industries of Japan*, Oxford, 1938, p. 288).

⁴⁷ Cf. Seizaburo Nobuo, *Nihon no Dokusen Shihonshugi (Japanese Monopolistic Capitalism)* (Tokyo, 1948), p. 151.

⁴⁸ Cf. United Nations, *Domestic Financing of Economic Development*, 1950, especially Part III, papers on Chile, Egypt, India, Mexico, Philippines, Puerto Rico, U. K. Dependencies. See also United Nations, *Final Report of the U. N. Economic Survey Mission for the Middle East*, 1949, Appendix II, "Financial Survey."

to industry through the zaibatsu system of family trusts, and even the commercial banks were heavily engaged in the financing of capital expansion. While such banking operations tended toward illiquidity and consequent shakiness of both banks and borrowers in times of crisis, the system did serve to collect much of the available funds and to channel them into constructive investment. Industrial and financial concentration in Japan was the vehicle of rapid innovation and expansion. Parallel to these practices of the private capital market was the devotion of governments, both central and local, to constructive uses of their revenues. Official practices were marked by a remarkable degree of vigor, efficiency, and even comparative freedom from graft.

The factors promoting voluntary saving and investment were a combination of economic incentives and broader social influences. Among the latter were the prevalence of internal peace and security, governmental policies of co-operation and support, the ancient virtues of diligence, frugality, and duty, and an inheritance system which prevented dissipation of family fortunes. Traditional motives of family prestige and power found new expression in building an industrial-financial dynasty. Prominent among the economic incentives were the high rates of return offered by deposit institutions, averaging nearly 6 per cent on fixed commercial deposits, and nearly 5 per cent on savings deposits, as late as the closing years of Period II.⁴⁹ Even higher returns were obtained by stockholders: annual dividend rates frequently ran as high as 25 per cent on invested capital, and averaged at least 10-12 per cent during Period II.⁵⁰ Capital gains, resulting from the persistent rise of the price level, gave investors confidence in regard to the future, providing in particular long-run assurances against the risks of the trade fluctuations of those times. Over all was the encouraging influence of the very economic expansion itself, hand in hand with the growth of national power. The Protestant ethic, which Max Weber pointed out in the West, is here encountered in an oriental version.

Requirements and Earnings of Foreign Exchange

The pressure of investment demand upon an inadequate supply of domestic real savings led naturally to stringency in foreign exchange. During Period I this stringency was allayed initially by the two early foreign loans, but was met chiefly by dishoarding of specie, depletion of natural resources, promotion of exports, and favorable terms of trade for the principal exports.

The first inflow of foreign capital originated in the years 1868-72, when newly opened Japan indulged in a heavy excess of imports. During the next eight years the adverse balance continued, although at a lower

⁴⁹ *Financial and Economic Annual of Japan*, 1915, p. 143.

⁵⁰ According to tabulations by industry in F. Barret, *L'Évolution du Capitalisme Japonais* (Paris, 1945), III, 308-316; also G. Odate, *Japan's Financial Relations with the United States* (New York, 1922), p. 108.

rate, and was enlarged by interest payments on the outstanding loans. Against the total of these items of outgo, the specie exports already mentioned were enormous;⁵¹ sufficient not only to cover the merchandise import excess and interest payments but also to yield a substantial surplus applicable to the invisible outgo (including loan amortization) and perhaps even providing a further sum against the "short-term" credits obtained during 1868-72. During the next fifteen years, 1881-95, the balance of merchandise trade turned positive while the net specie export dwindled away, although it did not entirely cease. These two items yielded a substantial surplus over interest payments, easily covering current invisible items and loan repayment. The export excess was achieved not by absolute shrinkage of imports, but rather by pushing exports while the rise of imports was restricted by general social saving.⁵²

Among exported goods the share of finished goods rose rapidly but was still only 15.5 per cent of total merchandise exports in 1888-92, and 26.2 per cent in 1893-97. The bulk of the exports were food and drink, raw materials, and semimanufactured goods (chiefly raw silk).⁵³ Equally important was the role of industrialization in restraining the demand for foreign goods imports. This effect was most conspicuous in the case of textiles: while imports of cotton yarn had risen to a peak in 1888, they fell off rapidly thereafter (as domestic production expanded) and never again reached so high a level despite the rising levels of income.

The export of Japanese resources and products was sponsored and facilitated by certain fortunate coincidences in history. Prominent among these was the spread of the demand for silk, especially in the rapidly developing United States, together with successive curtailments of the European supply.⁵⁴ Another fortunate factor was Japan's geographic location on the sea lanes to China and the rest of Asia. This was the basis for the growth of transshipment trade for Japanese merchants, and also for the demand for bunker coal, one of the few mineral resources plentifully available in Japan and located close to the sea. Copper is another mineral which bulked large in Japan's early export trade, although here as in coal rapid exploitation later reduced the supply below the level

⁵¹ During 1873-80, the annual average of net outward specie movements amounted to one-third of the annual merchandise exports.

⁵² Between 1873-75 and 1893-95, the value of imports quadrupled, while the value of exports sextupled (source: *The Foreign Trade of Japan*, published by the *Oriental Economist*, Tokyo, 1935, p. 698). This differential was in major part due to the favorable movement of the terms of trade, but in addition the physical quantity of exports appears to have risen somewhat faster than the quantity of imports.

⁵³ K. Taniguchi, "Strukturwandlungen des Japanischen Aussenhandels im Laufe des Industrialisierungsprozesses," *Weltwirtschaftliches Archiv*, July, 1937.

⁵⁴ In the 1860's there was an outbreak of silkworm disease in Europe. The years 1868 and 1876 were marked by especially severe failures of the French and Italian crops, and consequent shift to Japanese supply (G. C. Allen, *A Short Economic History of Modern Japan*, London, 1946, pp. 32-33).

of domestic needs. In general, the trend of the times enabled Japan to acquire vital foreign exchange from resources that were scanty enough in absolute amount but could be exploited without great cost or delay, attaining volumes which were sizable relative to the scale of the national economy during this early period.

The peculiarly favorable movement of the terms of trade during this period⁵⁵ may be attributed largely to the particular character of Japan's exports, dominated by raw silk. This commodity enjoyed a sellers' market, in contrast to foodstuffs and other agricultural staples, which predominated in the exports of most primary-producing countries and which were encountering a declining world price at that time in consequence of the opening of agricultural lands in the New World. Thus the average unit values of Japan's total exports held virtually steady from 1878 to 1891 (after which the average level even moved sharply upward). During the same period her imports became substantially cheaper in consequence of industrial developments in Europe. After 1893 this advantageous trend generally disappeared.

Direct data on international service transactions are not available for this period. However, it may be deduced from the above-mentioned operations in the current and capital accounts that a foreign-exchange balance of perhaps close to ¥ 60 million was available for invisible net imports and roughly measured their magnitude during these twenty-eight years.⁵⁶ This seems a large sum, although when taken on an annual basis it is approximately ¥ 2 million a year, or about 4 per cent of the annual average export trade. These figures reflect the relatively large cost of nonmerchandise items during the early stages of economic development. Such costs consisted of the trading profits of foreign merchants who handled the bulk of Japan's foreign trade during this period, payments for shipping, insurance, and similar services, the expenses of missions and students sent abroad, the salaries of foreign experts brought to Japan, and the like. In later years these particular invisible items shrank in importance as foreign trade passed into the hands of Japanese merchants and shipping companies, as foreign technical assistance and training diminished in relation to the volume of national production and trade, and as Japanese invisible earnings began to rise.

The shift from a balanced current account during Period I to a current deficit in Period II appears to have been due not so much to any marked rise in the marginal propensities to consume or to import, as to the acceleration of the investment program and the surge of national

⁵⁵ See indices of the terms of trade in *The Foreign Trade of Japan*, p. 698. Like most calculations of this kind, the indices are based on unit values, chiefly for staple commodities; this tends to understate the role of manufactured goods. This understatement is particularly important when the composition of trade is changing rapidly over time.

⁵⁶ Estimate based on data in H. G. Moulton, *Japan: An Economic and Financial Appraisal*, pp. 379-382, adjusted for missing items and probable understatements.

income. These trends, acting through the already high marginal propensity to import, produced merchandise imports too large in absolute amount to be covered by the export sources which had proved adequate during Period I. The service of the accompanying international debt kept the invisible outgo above the earnings and so added to the deficit position.

On the merchandise importing side, a large element was the growing need for imported capital goods and foreign experts. Although these drains were restricted by importing cheap, even if inferior, types of machinery and by training native technicians, the demand for foreign essentials of development grew rather than diminished relative to the volume of investment, as development became increasingly a matter of industrialization. Demand for imported capital goods extended not only to equipment but also to construction materials, which are often supposed to be chiefly a matter for local supply;⁸⁷ in the Japanese case, imports of construction materials nearly equaled the equipment imports in annual value. The aggregate of capital-goods imports, as a percentage of total merchandise imports, rose from 5 per cent about 1880 to 10 per cent during the 1880's, 18 per cent about 1890 and a peak of 23 per cent in 1897, but fell back to 13-14 per cent during the remainder of Period II. This ratio dropped to 11.6 per cent during World War I, as imports were restricted, but rose again in the 1920's to approximately the previous rate. (See Table VI.4.)

Some efforts were made to substitute native for foreign capital goods and technical personnel. Technical education was vigorously promoted, but the capital-goods industries were on the whole deferred until the twenties and thirties. In this field, the problems of capital intensity and operating efficiency, as well as the necessity of importing machines to make machines, were far more serious than the prospective benefits in reducing current demand for foreign capital goods. Indeed, the benefits of such substitution would have been limited by the high import propensity.

The strong demand for consumption imports arose from the spreading popularity of Western goods and the small capacity for producing them in Japan. Direct controls on imports were minor; direct import quotas or exchange controls were unknown, while import duties were nominal until after 1899 (due to the "unequal treaties" with foreign powers) and were only moderate thereafter (until the 1920's). The secular inflation of Japanese prices actually tended to encourage importation. Efforts to support the exchange rate, partly for the purpose of facilitating raw-material imports, had the effect of also encouraging consumer imports. At the same time domestic manufactures gradually lost the natural protection of remoteness and unfamiliarity which previously had deterred

⁸⁷ See for example Norman S. Buchanan, *International Investment and Domestic Welfare* (New York, 1945), pp. 18-19.

TABLE VI.4
CAPITAL GOODS IMPORTS (CGI)* OF JAPANESE EMPIRE BY PERIODS AND IN
RELATION TO TOTAL IMPORTS
(¥ MILLIONS, IN CURRENT VALUES)

PERIODS	PRODUC- TIVE EQUIPMENT†	CONSTRUC- TION MATERIALS‡	TOTAL CGI	TOTAL MERCHAN- DISE IMPORTS*	CGI AS PER CENT OF TOTAL MER- CHANDISE IMPORTS
1868-95§ . . .	88.3	70.4‡	158.7	1,245.8	12.7
1896-98§ . . .	79.3	42.5	121.8	706.6	17.2
1899-1903 . . .	87.7	93.4	181.1	1,413.9	12.8
1904-13	419.8	310.2	730.0	5,225.8	14.0
1914-19	354.7	478.9	833.6	7,175.6	11.6
1920-23	598.4	726.4	1,324.8	8,398.5	15.8
1924-29	887.4	991.0	1,878.4	15,034.7	12.5

*The coverage of items under capital goods is based on the League of Nations "Minimum List of Commodities for International Trade Statistics" (League of Nations, *Studies and Reports on Statistical Methods*, No. 2, Geneva, 1938), Group 7, "Capital Equipment for Agriculture, Industry and Commerce (All Durable)." For the present purposes, the items in this group of the minimum list have been distinguished as to "productive equipment" and "construction materials"; and additional construction items, identifiable as such in the Japanese data, have been transferred to the capital-goods category from the minimum list's group 4, "Durable Materials for Industry and Commerce."

†Annual data on imports of productive equipment were taken from *The Foreign Trade of Japan* (Tokyo, 1935), Group XVI, "Clocks, Watches, Scientific Instruments, Firearms, Vehicles, Vessels and Machinery" (p. 330), relating to Japan Proper, and from the corresponding group in the external trade of Formosa and Korea (*ibid.*, pp. 479, 589). As these groups contain several classes of consumer goods, and omit certain classes of productive equipment, the annual figures in each period were adjusted by means of exact totals of equipment imports in selected years (obtained from itemized data in *Dai Nihon Gaikoku Boeki Nempyo* published 1882-97 by Japan, Bureau of Customs, and thereafter by Department of Finance). The correcting ratios proved to be not far above or below unity, and did not vary widely from period to period.

‡Annual data on imports of construction materials were taken from *The Foreign Trade of Japan*, Group XV, "Metal Manufactures" (p. 306), Group XIII, "Clay and Glass" (p. 274), "Total Iron" (p. 287) and "Total Wood" (p. 335), plus the corresponding classes for Formosa and Korea (pp. 478, 588). The annual figures were adjusted by correcting ratios obtained by the method outlined for productive equipment. In this case, however, the correcting ratios ranged between 44 per cent and 71 per cent from period to period, and hence show more leeway for imperfect correction.

§Figures on total imports of the Japanese Empire were taken from *The Foreign Trade of Japan*, p. 660.

§Import values from 1868 to 1887 inclusive are in terms of gold or silver yen; from 1888 to 1897 inclusive, silver yen only; from 1898 forward, gold yen only. Imports were valued f.o.b. port of origin from 1868 to 1898, thereafter c.i.f. port of destination.

‡During most of 1868-95 the breakdown of import data is not sufficiently fine or consistent for the calculation of construction-materials imports for the whole period according to the method outlined in notes † and ‡ above. A figure for the whole period was extrapolated from the data for 1890-95.

foreign merchants from penetrating the Japanese market. The chief restraint on induced imports was the substantial marginal propensity to save.⁵⁸ The force of this restraint is not denied by the presence of a high marginal import propensity, but rather is attested by the fact that this propensity did not go to the height found in many underdeveloped countries today. In Japan's early development, the income-elasticity of im-

⁵⁸ As J. J. Polak points out in his article, "Balance of Payments Problems of Countries Reconstructing with the Help of Foreign Loans," *Quarterly Journal of Economics*, LVII (Feb., 1943), 214, an emphasis upon spending investment outlays at home rather than abroad will contribute to the foreign-exchange balance only if the marginal propensity to consume is below unity. If this propensity is close to unity, "any money spent at home instead of for imports will eventually 'leak away' to pay for imports all the same."

As a practical matter, however, it is often possible to obtain some savings from domestic-investment outlays added to the national income, whereas no such offset is possible in the case of capital-goods imports directly absorbing foreign exchange.

ports was well over unity, but probably declined slightly from Period I to Period II.⁵⁹

Import demands were intensified for a time by certain changes in the allocation of domestic resources, responding to international comparative advantage. The chief of these changes occurred in raw cotton. Toward the end of the nineteenth century, Japan was shifting from the native supply (which had met all needs until about 1890) to the cheaper and better foreign staple. By the end of Period II, home cultivation of cotton had fallen to negligible volume, and the booming textile industry was almost entirely dependent upon foreign supplies of raw materials. Offsets to this import burden emerged but slowly, as cotton farmers turned to other crops, as exports of textile products rose, and as imports of finished textiles were held to a slow growth.

Thus, in textiles as in other production, investment in Japanese industries gradually yielded exportable products and progressively shifted part of the import demand from finished goods to correspondingly smaller amounts of raw materials.⁶⁰ This process, however, was not self-equilibrating, because of disparities in timing and sequence. In the first place, exports were held back, relative to investment, by difficulties in penetrating export markets already dominated by Western powers. This problem was acute in Periods II and IV, and was relieved in Period I only by the predominance of primary produce in exports, and in Period III by the special circumstances of wartime. Even the home market offered some resistance to the replacement of imports by domestic manufactures.

In the second place, the usual lag of output behind investment was reflected in the area of offsets to imports. On the one hand, the economy had outgrown the native raw-material base which had been adequate during Period I; on the other hand, the fruits of the new investments were delayed, in an increasing proportion of cases, by long gestation periods, roundabout sequences, and fairly high capital-intensity. The trend of exports is suggested by the following tabulation of changes from 1893 to 1912 (based on current values):

CATEGORY	RATIO OF 1912 VALUE TO 1893 VALUE ⁶¹	
Total exports	5.9	
Food exports		3.0
Raw material exports		4.8
Semi-mf'd exports		7.2
Manufactured exports		7.0
Total imports	7.0	

⁵⁹ Estimate based on comparison of trends in national income (according to estimates indicated in n. 5, *supra*) and trends in total merchandise imports.

⁶⁰ The gain in net foreign exchange was, of course, considerably less than the initial amount of value added in Japan, because of the familiar multiplier and import-leakage effects.

⁶¹ Source: *The Foreign Trade of Japan*, p. 450. Here as elsewhere, raw silk

The lag of food exports reflects the slackened growth of agricultural output after 1900 together with the growing domestic demand. The lag in raw-material exports was due chiefly to a lag in mineral production during 1895-1905, together with increased consumption in Japanese manufactures. Thus the category of foodstuffs, which had been in balance or in slight export surplus during Period I, went into import surplus during Period II; while raw materials, whose exports had contributed importantly to the positive merchandise balance during Period I, lagged behind the advance of imports during Period II. These two classes of goods were derived from native resources in Japan, and their inadequate performance reflects the degree to which the entire economy had outgrown the native endowment.

The sustained rapid growth of raw silk is the one major exception to the foregoing picture of native materials, and even the trade figures classify silk as a semimanufactured product. Indeed, it was the export growth of silk fibers and of manufactured products,⁶² plus, to a lesser degree, of coal exports, which provided the chief offsets to the rising imports. Yet these fields could not expand rapidly enough to make up for the lags in the other categories of exports.

Movements of the terms of trade do not seem to have contributed significantly to the appearance of the unfavorable balance of merchandise trade during Period II. The fact is that the ratio of export prices to import prices for the actual pattern of Japanese trade from about 1890 (or even from 1885) showed little trend (albeit considerable annual fluctuation) until a sharp peak appeared in 1906/7, followed by a resumption of the earlier level during the two following years, after which the ratio declined rapidly and drastically to 1913.⁶³ In one particular respect, the import of capital goods, which occupied so substantial a share of total imports, Japan derived some positive benefit from the relative trends of commodity prices. The prices of imports of finished manufactures—including capital equipment—tended to lag behind the general import-price trends, and capital-equipment prices probably lagged behind finished manu-

is included among semimanufactures. The selected years, 1893 and 1912, appear to be reasonably representative of neighboring years in each case.

⁶² Exports of manufactured goods rose in quantity faster than the index of physical production of such goods; see index of quantity of exports, in *The Foreign Trade of Japan*, p. 699, and the Nagoya index of the volume of production (*Oriental Economist*, Dec. 1934, p. 12). A similar relationship may be observed in the tabulation and diagram for Japan in the comparative study of a number of countries by the League of Nations, *Industrialization and Foreign Trade* (1945), pp. 89, 130, 163, after correction of the League's figures on Japanese production before 1905 (these figures for 1891-1905 were based merely on consumption of coal, as stated in the League's footnote, p. 149, and rise too rapidly; they may be replaced by the Nagoya figures which have been cited above and which are used by the League for later years but apparently were not fully available to the League authors).

⁶³ Based on *The Foreign Trade of Japan*, p. 698, indices of unit-values of exports and imports.

factures as a whole.⁶⁴ Thus Japan was obtaining the capital equipment for her industrial expansion with much less strain upon her export proceeds than was the case for other categories of her imports.

Government assistance was important in export trade, but operated rather indirectly, along such lines as initiation of new industries, experimentation and supervision of quality of product, subsidies to shipping, and dispatch of commercial missions abroad. However, government agencies did not generally maintain direct financial assistance to the producers of raw materials or finished goods, nor direct controls on the disposition of the product as between the home market and export. On the whole, the allocation of productive resources was governed by the attractions of the market; while the release of goods for export was promoted by the general economic processes which restricted domestic consumption. Fundamentally, the earning of foreign exchange was not a matter of specific "export industries" but rather a function of the developmental institutions as a whole.

The deficit in invisible items, which accompanied the merchandise deficit, was substantial during Period II (see Table VI.2), but diminished toward the end of this era.⁶⁵ The largest single item of net invisible outpayments consisted of service of foreign-capital obligations, while the next largest item was government payments (which after 1899-1901 included direct armament imports and other military items as well as diplomatic activities, hiring of foreign experts, dispatch of students abroad, etc.). As a proportion of gross invisible outpayments, capital service accounted for almost half, while government payments represented another third. The other outpayments were relatively minor. These proportions refer to the aggregate over the period 1904-13; within the period there were marked trends. The government payments were greatly swollen during the war years 1904-5 by direct purchasing abroad, the level during these years being about seven times the annual peacetime rate. The cost of servicing the foreign capital rose to well over half the gross outpayments for invisibles beginning in 1906, after the huge loans of the war years.

The inpayments consisted chiefly of two items: shipping earnings, which represented Japanese services rendered abroad, and foreign income,

⁶⁴ The *Oriental Economist* indices for import prices of finished manufactures begin in 1903 (*op. cit.*, p. 701). From that date until 1912, the price index for finished manufactured imports lagged considerably behind the price index for all imports.

For the whole period 1890-1913 some indication of the lag in capital equipment prices may be drawn from the series compiled by W. H. Shaw, *Value of Commodity Output since 1869* (New York, 1947), p. 294, showing prices of producer durables in the United States, an important source of Japanese imports. Shaw indicates, p. 270, that export prices for producer durables were not significantly different from manufacturers' prices, and his tabulations show a considerable lag of producer durables prices behind the prices of other industrial goods.

⁶⁵ See annual tabulation in Schumpeter *et al.*, *The Industrialization of Japan and Manchukuo, 1930-1940*, end-papers, Table I.

representing productive investments abroad.⁶⁶ The third notable income item, tourist expenditures, was relatively small and approximately offset the minor outpayment items.

The favorable balance of trade which Japan achieved during World War I was due to extraordinary and temporary factors. While orders for munitions and military supplies flowed in from the Entente Powers, markets in the underdeveloped countries of the Far East, Africa, and South America—previously controlled by European suppliers—were laid open, and the home market in Japan was freed from European competition. Likewise, service income was expanded, particularly as Japanese shipping came into great demand and as Japanese investments abroad were enlarged. These advances were based less on real-capital formation⁶⁷ than on increases in prices and service charges, absence of competition, and use of capacity beyond ordinary rates.⁶⁸ At the same time, imports lagged well behind exports until 1919, as a result of supply limitations abroad combined with substantial domestic saving.

The foregoing situation could not be long maintained, any more than it could have been instituted during the prewar years of peace. In 1919 merchandise imports caught up with and outstripped exports, and stayed ahead during the trade decline of 1921-23 and during the subsequent recovery to 1929. The merchandise import surplus averaged between one-sixth and one-seventh of total merchandise imports, showing approximately the same ratio as in Period II.⁶⁹ The share of capital-goods imports was almost 13 per cent of total merchandise imports during 1924-29, as against 14 per cent during the earlier period;⁷⁰ and this category of imports also equaled the bulk of the total merchandise-import surplus (namely, 19/23 of the latter, whereas during Period II it had slightly exceeded the whole merchandise surplus). An important innovation, however, was the positive balance in the invisible account (even

⁶⁶ See further discussion in Absorption of Foreign Capital section below.

⁶⁷ Expansion in productive capacity was rapid in certain fields, notably iron and steel, shipping, and chemicals, but was only moderate in such industries as textiles, which represented the major share of Japanese industry and exports. See K. Yamasaki and G. Ogawa, *The Effect of the World War Upon the Commerce and Industry of Japan* (New Haven, 1929), Section II, esp. p. 314.

⁶⁸ Such a pattern is quite clear in the case of shipping. During 1913-19, tonnage was less than doubled (S. Ueyhara, *The Industry and Trade of Japan*, London, 1926, p. 242) while freight income rose tenfold (Schumpeter *et al.*, *op. cit.*, endpapers, Table III). Ships were usually loaded almost to capacity, and the turn-around was rapid.

The lag of real capital formation is also attested by the actual decline in equipment imports, as already mentioned; this was only partly compensated by the growth of the capital-goods industry in Japan.

The over-all terms of trade in merchandise showed little change; the ratio of export prices to import prices actually declined somewhat during 1917 and 1918 (*The Foreign Trade of Japan*, p. 698).

⁶⁹ Based on Schumpeter *et al.*, *op. cit.*, end-paper tables.

⁷⁰ See Table VI.4.

after service of foreign capital),⁷¹ due chiefly to the expansion of Japanese shipping. This surplus was not so high as during wartime, nor was it adequate to cover more than one-half of the merchandise deficit, but it was significant in contrast to the negative balance which had prevailed in invisibles before the war.

All in all, as the process of development resumed its course during the twenties under conditions more closely resembling prewar conditions,⁷² the international accounts showed a current deficit likewise resembling the prewar deficit.

ABSORPTION OF FOREIGN CAPITAL

The remarkable domestic performance of the Japanese economy, as exhibited during the earliest stage of modernization, was not adequate to meet the demands of Periods II and IV. More specifically, the strenuous saving effort during these years was not adequate to cover the huge burden of productive capital formation together with military outlay and accumulation of consumer durables. Nevertheless, the Japanese did not curtail their developmental drive.

While the Japanese government kept in view a general scheme of developmental goals, it did not have a detailed program, with a system of national accounts exactly adjusting outlays to resources, along lines often urged today.⁷³ Such programing was of course unheard of at that time. Furthermore, the requisite information was lacking, as well as the institutional machinery to enforce the adjustments. The government's fiscal policy was opposed to deficit financing in principle, but did not rule out major deviations from that principle on occasion. Conspicuous by their absence were the modern devices of centralized credit management, price control, rationing, and direct controls over foreign exchange. Finally, when conflicts arose between development and stabilization, the government was willing to permit and even to encourage certain disequilibria in the economy and certain sacrifices among the population, when these seemed to promote development. In the last extremity, the government relied on foreign investors to pick up the check.

The concomitant of rapid development under these circumstances was the pattern of stringencies which appeared on both the micro- and the macrolevels. Particularly noteworthy were the bottlenecks facing new enterprises, the moderate but persistent inflation of domestic prices,

⁷¹ See Table VI.2.

⁷² Due allowance must be made for important internal and external changes; in the greater degree of industrialization, the wartime heritage of overcapitalized companies and dislocated price structures, the postwar barriers to international trade, and the like. The devastating accident of the 1923 earthquake and the subsequent reconstruction also played a special role.

⁷³ Cf. United Nations, *Formulation and Economic Appraisal of Development Projects: Major Course Lectures Delivered at the Asian Centre on Agricultural and Allied Projects* (Lahore, Pakistan, 1951), especially Part I, by Dr. H. W. Singer, and Part V, by Dr. F. De Vries.

and the continual pressure on the international accounts. The inflow of foreign capital provided the means of coping with these effects, continuing the developmental process, and servicing earlier loans. Perhaps the most remarkable feature of this operation is the relatively small volume of foreign capital which was required for these functions.

Bottlenecks and Cultural Resistance

The direct and immediate obstacles which hamper absorption of foreign capital in many countries consist largely in physical bottlenecks and cultural resistance. Both of these types were attacked early in the Japanese modernization, and were already much reduced when foreign borrowing was resumed at the end of the nineteenth century. During Period II further progress was made along these lines concurrently with the inflow of external funds.

The pattern of industrial investment, as described in the preceding section, served to avert physical bottlenecks in transportation, public utilities, and engineering. At the same time, the over-all emphasis on capital-light industries, small-scale workshops, a low degree of urbanization, and the like, tended to minimize the total factor requirements. An adequate, indeed a superabundant, total volume of labor supply was assured by rapid population growth, responding particularly to the improvements in sanitation, medical care, and food supply.

Similar results were achieved along institutional lines by positive action promoting the commercialization of economic relations; the spread of the banking and credit system; recruiting of labor from the countryside; education and training in modern science, in productive technique, and in business management; maintenance of internal peace and order. Less obvious than these positive measures is the fact that the economic successes of Period I and the acceleration in Period II generated a spirit of enthusiasm which drew conservatives into the modernization effort and circumvented the reactionaries. The founding of national banks with bonds issued to the former nobles in commutation of their pensions, the attraction of rural landlords into industrial investment (partly in corporate securities, partly in direct undertakings), and the mobilization of small savings in savings banks and postal-savings accounts, are examples of the cumulative, self-reinforcing effects of the ongoing transformation. Indeed, the gradual disappearance of the phobia against foreign capital was itself an effect of the economic and military successes.

In these transformations the Japanese minimized social shock and social resistance by adapting the new to the old. This is evident not only in the recruiting of female factory labor, mentioned previously, but also in the utilization of family solidarity and feudal loyalty in the management and integration of modern corporate enterprise.⁷⁴ Indeed, several authors

⁷⁴ Cf. F. Barret, *L'Evolution du Capitalisme Japonais* (Paris, 1945), I, 68-83; and G. C. Allen, "The Concentration of Economic Control of Japan," *Economic*

have pointed to Japan as an example of rapid acculturation without social and moral disintegration, in contrast to the case of certain colonial and semicolonial areas.⁷⁵

In consequence of the elimination of many bottlenecks and the destruction or circumvention of social resistance, the degree of economic mobility in Japan was well advanced by the beginning of the twentieth century. Consequently, as indicated below, boom conditions usually led to an expansion of production and productive facilities, rather than mere inflation and speculation. The growing degree of mobility, promoted by the Japanese themselves, made possible the successful absorption of foreign capital. The latter in turn provided foreign real resources as well as funds to prime the domestic capital market, and so further enlarged the mobility. The complex interrelations here between the secular expansion and the cyclical movements are examined further in the two following sections, dealing with inflationary pressure and with burdens on the balance of international payments.

Inflationary Pressures

A tendency toward inflation will probably accompany economic development in any country where basic facilities are being constructed and resources are being shifted on a large scale and at a rapid pace.⁷⁶ Whether or not such a tendency will turn into hyperinflation depends partly on domestic institutions and partly on foreign assistance. The Japanese experience during Period II is especially significant here.

During this period inflationary pressures were held within tolerable limits. The secular advance of wholesale prices was substantial, somewhat outrunning contemporary trends in other countries, but did not exceed 2.2 per cent a year (compound rate) during 1900-13.⁷⁷ While there were recurrent booms and crises, there was no runaway inflation. In industry the price rise apparently inflated sales receipts more than costs, the latter being held back particularly by the stickiness of wages. Profits were high, but prices did not rise so fast as to induce a general shift from

Journal, XLVII (June, 1937), 271-286. Also, O. D. Russell, *The House of Mitsu* (Boston, 1939).

⁷⁵ See for example A.D.A. de Kat Angelino, *Colonial Policy* (The Hague, 1931), Vol. I, chap. viii.

⁷⁶ Cf. C. P. Kindleberger, *The Dollar Shortage* (New York, 1950), pp. 126-130; also United Nations, *Measures for the Economic Development of Under-Developed Countries* (New York, 1951), p. 42.

⁷⁷ According to wholesale prices for Japan, Great Britain, and the United States, all converted to base of 1900=100, in H. G. Moulton, *op. cit.*, 1944 ed., chart, p. 119 and table, p. 437. The speed of the Japanese price rise is more evident in comparison with the British figures than in comparison with the American measures, since the United States was in the midst of a developmental boom more closely resembling the situation in Japan. All price comparisons are subject to familiar limitations arising from the methods of constructing the indices as well as structural differences among the countries concerned.

production to mere speculation. The central government was able, on the whole, to adhere to its conservative fiscal policy, in spite of inadequate taxation systems, rising costs, and public expenditures averaging nearly one-fourth of the estimated national income during Period II.⁷⁸ The advances in the cost of living tended to restrain consumption but did not preclude a moderate rise in real wages and the actual level of living. These features of a moderate inflation were kept from turning into hyperinflation by a combination of substantial domestic savings and substantial consumption imports. The latter were made possible by the capital inflow itself, which covered the deficit in the balance of payments without restriction as to the particular application of the foreign funds; more specifically, without directly restricting the foreign funds to capital-goods imports.⁷⁹

To be sure, the cyclical phenomena which attended the capital inflow raise the question of inadequate facilities for absorbing the inflow smoothly and efficiently, and suggest the possibility of waste. Thus Ono,⁸⁰ among others, asserts that the chief inflows of foreign capital during Period II⁸¹ were excessive, contributing on each occasion to a "plethora of funds" which in turn went largely into unproductive investment, especially speculation, and only wound up in a crash and depression. However, this view overlooks the role of the business fluctuations in economic development, and in dealing with foreign capital sets the cart somewhat before the horse.

There is little doubt as to the fact of alternating booms and recessions during Japan's evolution.⁸² But it should be clear that foreign-capital inflow was not the primary force behind the fluctuations. During

⁷⁸ However, in times of extraordinary effort, especially but not solely during the war years, the government turned readily to domestic borrowing, repaying the loans during subsequent years of budget surpluses and foreign bond issues. In addition, the generally conservative fiscal policy was not accompanied by tight controls over private credit, the central bank being notably lax in this regard.

⁷⁹ See section below, Relief of Pressures on the Balance of Payments.

⁸⁰ G. Ono, *War and Armament Expenditures of Japan* (New York, 1922), Part II, chap. iii. A related view is expressed by S. Y. Furuya, *Japan's Foreign Exchange and Her Balance of Payments* (New York, 1928), pp. 49-51, who complains of inflationary pressures due to domestic note issue based on foreign-loan proceeds; however, Furuya is chiefly concerned with the resulting international stringencies. See also U. Kobayashi, *War and Armament Loans of Japan* (New York, 1922), p. 196.

⁸¹ The receipt of the Chinese indemnity in 1896-98, the foreign loans of 1904-5, and the foreign loans of 1910.

⁸² The business fluctuations during 1877-1913 may be dated approximately as follows:

1877-81:	boom	1891-92:	recession	1903-7:	boom
1881-85:	recession	1893-1900:	boom	1907-9:	recession
1886-90:	boom	1901-2:	recession	1910-13:	boom

Sources: Ono, *op. cit.*; Barret, *op. cit.*, tome 3, première partie, chap. i; W. L. Thorp, *Business Annals* (New York, 1926), pp. 341-350; S. Tsuru, "Economic Fluctuations in Japan, 1868-93," *Review of Economic Statistics*, XXIII (Nov., 1941), 176-189.

Period I, when foreign capital was a minor factor, the waves of expansion and contraction must be attributed to other causes, internal or external.⁸³ During Period II the inflow of foreign capital generally followed rather than preceded the beginning of a boom. Indeed, the foreign capital appears to have been not so much the cause of "excessive" expansion as a result, in that foreign borrowing by the government was to alleviate the strains of rapid economic development and military outlay. The boom which followed the Sino-Japanese War was well under way before foreign borrowing was undertaken on a substantial scale in 1899, and even before the Chinese indemnity, paid in sterling in London during 1896-98, had had an opportunity to influence the domestic economy; however there is no doubt that these inflows did add to the expansionary drive already under way. The large foreign borrowings of 1904-5 had but indirect and somewhat limited effects upon the domestic economy in any one year. Part of the loan proceeds was disbursed abroad directly for military purchases. Another part, about two-fifths of the whole, was left temporarily in specie balances abroad, in anticipation of future trade deficits to be settled in gold. The import of specie for addition to gold stocks within Japan was relatively small from 1905 to 1908, and the loans of the central Bank of Japan did not increase greatly. To be sure, the bank was enabled greatly to augment the yen-note issue, because specie holdings abroad were treated as part of the legal reserve against the notes in circulation; but this note issue does not seem to have been disproportionate to business requirements.⁸⁴ The 1910 foreign loans were floated during a depression. As the proceeds were devoted chiefly to retiring outstanding domestic bonds issued at a higher rate of interest, this operation added to disposable funds in the domestic economy, and undoubtedly contributed to the 1910-11 recovery.

Evidently, the economic fluctuations in question must be attributed to expansionary movements, due to a variety of stimuli, which ran into obstacles that were virtually inevitable but were temporary in effect. Among the stimuli may be noted not only foreign-capital inflow, but also domestic investment (including government deficit spending in wartime, and business utilization of bank credit under easy-money policies), and rising foreign demand for Japanese exports. Among the obstacles were: entrepreneurial excesses (the hasty promotion of purely speculative ventures,

⁸³ Tsuru, *op. cit.*, pp. 184-186, is inclined to place much stress upon the movements of foreign demand. While this was undoubtedly an important factor after 1885, it does not seem to contribute to the explanation of the cycle of 1877-85, according to Tsuru's own showing, pp. 178-180, which emphasizes the monetary expansion of 1877-81 and the deflationary policy of the government in 1881-85. In general, for the years from 1885 to 1913, the movements of foreign demand appear to have been critical in inducing the recessions but not nearly so important in relation to the expansions.

⁸⁴ Cf. O. M. W. Sprague in U. S. National Monetary Commission *Publications*, XVIII (Washington, 1911), 213.

and of others which had more constructive purposes but were ill-conceived or inadequately capitalized or poorly managed); and slumps in foreign demand (due chiefly to economic conditions abroad, as in 1901 and 1907). Financial stringencies in the form of overextension of bank credit relative to bank reserves were aggravated by two prevailing Japanese practices. On the one hand, the habit of relying on bank loans for fixed as well as working capital tended toward illiquidity for the banks. On the other hand, the absence of a legal requirement for bank reserves against credit extensions and the weakness of the central bank's control over ordinary banking operations⁸⁵ left credit policy subject only to professional prudence and the occasional admonitions by the Bank of Japan.

It is almost unavoidable that a strong expansionary movement in any kind of economy would run into blocks of one kind or another; the interruptions were a virtual certainty in a society which was rapidly changing its allocation of resources, its basic institutions, and its relation to the world economy. These general features are confirmed by the character of the "cycles" in Japan: the expansionary phases were strong and extended, and brought real as well as financial growth, while the recessions were sharp but short, were not general throughout the economy, and, in particular, brought little idleness of productive capacity.⁸⁶ The subsequent recovery soon carried the economy to levels far higher than had ever been attained previously.⁸⁷

It may be that the foregoing process of forming real capital entailed considerable wastes, e.g., the inventories withheld by speculators, and the stranded resources of bankrupt firms. However, in Japan such wastes were not prolonged, because of the persistent demand for capital goods and for inventories.⁸⁸ On the other hand, even a temporary stranding of resources, or diversion from processing channels, is especially serious when the total stock is relatively low, as it usually is in underdeveloped countries.

Given the desired acceleration of development, and the system of private

⁸⁵ See Sprague, *op. cit.*, p. 204. Also H. M. Bratter, *Japanese Banking* (Washington, 1931), p. 8.

⁸⁶ Cf. Barret, *op. cit.*, pp. 45, 49, 60, etc.

⁸⁷ This pattern shows considerable similarity to the schema developed by J. A. Schumpeter in *The Theory of Economic Development* (Cambridge, Mass., 1934) and *Business Cycles* (New York, 1939). However, in the Japanese case the course of innovation was more regular and continuous than in the case of Britain's economic evolution, for example, because it was based primarily on technical imitation and did not depend on original invention. That is, the Japanese drew various items from a standing list of "innovations" already worked out elsewhere, and were limited chiefly by economic factors free of the vagaries of technologic discovery (and also relatively free of the dead hand of sunk capital). Indeed, the Japanese case suggests that during vigorous economic development the "business cycles" may be derived from the secular trend (via inevitable interruptions), rather than the trend deriving from the successive cycles (as in Schumpeter's conception). In the last analysis, however, the relationship should probably be considered reciprocal.

⁸⁸ In Japan bankrupt firms were usually and quickly absorbed by larger, stronger competitors.

enterprise assisted at strategic points by the government, the developmental procedure became a process of trial-and-error, inevitably accompanied by a measure of temporary confusion, setbacks, and even some real waste. Indeed, the cyclical fluctuations, partly derived from the secular trend, may in turn have actually promoted the secular trend through their influence on entrepreneurship. Less exuberant times might have provoked much less response from a people newly emergent from premodern ways. In turn, the recessions weeded out the merely speculative, the poorly managed, and the undercapitalized ventures (along with a number of more solid firms, no doubt), and consolidated their real assets with those of stronger firms.

In summary, it may be said that foreign-capital inflow played an important but not controlling role in the economic fluctuations in Japan, and that successful absorption of foreign capital was not noticeably limited by the booms and recessions. To be sure, a larger and more continuous inflow might have averted some of the recessions if it had been forthcoming at the crisis points; but unless it had been perfectly timed, it might also have aggravated the booms.

Relief of Pressures on the Balance of Payments

The domestic strains were readily shifted to the international accounts, in the absence of specific *ex ante* controls over the latter. The available evidence suggests that the international deficit was primary in the Japanese case, and induced the recourse to foreign borrowing as a balancing operation. This causal sequence is indicated by the fact that the drive to industrialize was a long-term, deeply rooted feature of the society; that domestic credit extension was easy and lavish; that foreign borrowing was not resumed at the end of the nineteenth century, until after an investment boom and the accompanying shift from an export surplus to a deficit; and that the borrowing was done chiefly by the government, which kept part of the proceeds abroad in specie balances until needed to cover later deficits. This pattern, which was quite clear during Period II, was less distinct in Period IV, when the greater part of the foreign-capital inflow was provided by private bond flotations and direct investments; but even here the drawings upon specie balances suggest the primacy of the trade deficits.

The pressures on the balance of payments, which had begun after the Sino-Japanese War, continued to the very end of Period II. Foreign exchange was chronically deficient, the exchange rates of the yen on Western currencies persistently tended below par, and the gold reserve was exiguous. From about 1910, while the domestic economy was still booming, the deficit on current account was actually rising in absolute amount (although roughly stable relative to total imports). Specie holdings abroad were substantially reduced, and those at home were drawn down somewhat as well.

Among these foreign-exchange difficulties, the role of service on the

foreign debt presents special interest, as a direct measure of success in absorbing the inflow of foreign capital. There can be no doubt that capital service was a heavy burden. As foreign capital flowed in, the gross outpayments of interest, dividends, and profits rose from about 4 per cent of all current outpayments in 1904 to about 10-11 per cent by the end of the period. Over the whole period, the *net* outpayments of interest, dividends, and profits came to a figure about half the net deficit which appeared aside from capital service.⁸⁰ In a sense, therefore, capital service accounted for fully one-third of the "net" capital inflow. This is the basis of the statement, in the section on "Relative Magnitude of Foreign Capital Inflow" above, that only two-thirds of the foreign assistance represented real resources added to the Japanese economy from abroad. The converse of this proposition is that the later loans during this period went, in large part, to service the earlier loans.

The burden of capital service should not be ascribed to any special severity of the charges. The effective rate of interest on the foreign loans was only 5 per cent. While the rate of return on foreigners' direct investments was considerably higher, these direct investments were small in amount and in share of the total capital inflow, and were offset by equally high rates of earnings on Japanese direct investments abroad. To some extent, the service problem was aggravated by the inflexibility of the remittances—not only interest on loans but also dividends and other profits—in the face of substantial fluctuations from year to year in the international deficit.

Underlying these features of debt service was a more basic problem, one which implied prolonged dependence on external assistance. Clearly Japan displayed a high capacity to absorb foreign capital, in the primary sense of putting the foreign contribution to productive use, and in the further sense of meeting the induced domestic problems of rapid development. But absorption was unsuccessful in the sense that interest charges on foreign obligations, let alone amortization, could not be met from current earnings of foreign exchange. The "expansion ratio" (to use a concept developed by Dr. Polak⁸⁰) was too high for the basic parameters of the economy.

In a sense, the Japanese economy during Period II was covering the "domestic costs" of economic development. For the deficit in merchandise trade was approximately equal to the total imports of capital goods, while the deficit on invisible account was equivalent to the net outgo for capital

⁸⁰ During 1904-13 the deficit on merchandise account aggregated ¥ 706.5 million, and the deficit on invisible account (excluding net outgo for capital service, but counting in gold exports) aggregated ¥ 13.5 million, making a total deficit so defined of ¥ 720 million. During the same period the net outgo for capital service (outpayments of interest, dividends, and profits, less receipts of the same) aggregated ¥ 362.7 million. (Data from Table VI.2.)

⁸⁰ J. J. Polak, *op. cit.*, pp. 213-216. The "expansion ratio" is defined as "the actual ratio of the rate of investment over the initial rate of capital inflow."

service. Thus, these two items of "external costs," the imports of capital goods and the debt service, measure the degree of Japan's dependence on foreign capital (although of course no direct material connection should be drawn among these categories).

Fundamentally, it was the continued developmental effort itself which limited current service capacity. For if the development (including armament) had been halted, say after 1908, the saving of foreign exchange on account of capital-goods imports alone would have more than covered the capital service on the then-outstanding debt. In addition, the cessation of new net investment would have eliminated the corresponding induced imports for consumption, thus adding to the foreign-exchange balance. Finally, reduction or elimination of new foreign borrowing would have cut down the actual interest charges. But to curtail development in order to avoid further foreign borrowing, at a time when outside capital continued to be available, would have amounted to throwing out the industrialization "baby" in order to keep its bath water clean.

Indeed, the industrialization in progress had begun to provide offsets to its own foreign-exchange costs along several lines, notably the provision of services in ocean freight, in insurance, in tourism, and in Japanese foreign investments. The continuation of this growth in invisible foreign income (or reduction in former invisible outpayments), to the point where the income eventually exceeded the outpayments, depended upon continuation of the industrialization in such fields as shipbuilding and tourist facilities, just as the growth of merchandise exports depended on the creation of manufacturing, transportation, and urban facilities. By the same token, the placement of Japanese investments abroad, in the face of the large gross inflow of foreign funds at that time, was probably justified by the relatively high rate of return, the stimulus to home industries, and the diversification of Japan's foreign trade.⁹¹ The growth in foreign-exchange earnings, looking toward ultimate economic visibility, involved in the meanwhile the foreign-exchange burden of capital-goods imports and the service of additional capital loans. Thus, the cumulative foreign loans, which supported that burden, also contributed toward eventually eliminating the dependence on foreign capital.

However, this consummation, although devoutly wished, was long de-

⁹¹ Returns on these investments were rather high: 9 per cent according to Moulton (*op. cit.*, p. 391), 8 per cent according to Mrs. Gordon (in Schumpeter *et al.*, *op. cit.*, p. 920), and this order of magnitude is confirmed by the data on foreign income related to estimated capital value of the investments. Thus the Japanese were borrowing abroad at about 5 per cent and at the same time were investing abroad (in much smaller amount) for a return 3-4 per cent higher. From a wider economic viewpoint, these foreign investments, which were concentrated in China (including Manchuria) and elsewhere in the Pacific area, served to open up foreign markets and sources of raw materials which were vital to the continuation of Japan's industrialization as well as to the balancing of Japan's accounts with the world economy.

layed. The period of World War I proved to be only a temporary respite. During the 1920's invisible transactions showed a positive balance, but the merchandise-import excess was huge. Japan's dependence on foreign capital would have been very heavy were it not for the availability of the foreign balances accumulated during the war.

Several writers⁹² have alleged that Japan's exchange difficulties during the 1920's (and even those before World War I) were due to overvaluation of the yen on the exchanges, resulting in excessive imports and barriers to exports; and the evidence cited ranges from international comparisons of price levels through the statistics of gold shipments by Japan to the institutional character of the banking-industrial complex in the Japanese economy. Mrs. Gordon's careful discussion points out the statistical and theoretical unreliability of the data which have sometimes been used to show that Japanese prices did not fall as far after the war as prices in other major countries, but she insists on a substantial price lag. By way of explaining this phenomenon, she stresses the inflationary policies of pegging the exchanges and providing liberal internal credit; but she probably makes too much of the necessity for recurrent gold shipments, since these were simply the utilization of the wartime-accumulated balances and thus were equivalent currently to new foreign-capital inflow. What seems to be overlooked or minimized in this whole approach is the importance of the secular developmental movement and the persistently high rate of investment, during Period IV as well as during Period II.

The line of causation may be drawn in either direction: from high prices to the need for foreign borrowing, or from capital inflow to high prices. Mrs. Gordon suggests that mutual determination is the proper interpretation. However, the historical trends examined in the preceding chapters, combined with certain structural features of the Japanese economy, suggest that a direct causal interpretation may be valid here as in Period II. There can be no doubt of the long-term drive to industrialize, as well as the large volume of purchasing power created directly by investment and indirectly via the multiplier. The development process is probably inevitably inflationary, even with the aid of foreign capital. This inevitability was compounded in Japan by the fact that the commercial banking system was in the hand of the *zaibatsu*, who also were the principal industrialists. While a stabilizing or even deflationary policy might have appealed to an independent banking group, the industrial interest was attached to easy credit. The record indicates that easy credit and industrialization, at the cost of a moderate inflation and stringency in foreign exchange, carried the field.

⁹² E.g., J. Inouye, *Problems of the Japanese Exchange, 1914-26* (London, 1931), *passim*; *The Foreign Trade of Japan* (Tokyo, 1935), pp. 22, 24, 28-29; Mrs. Gordon in Schumpeter *et al.*, *op. cit.*, pp. 898-907; S. Y. Furuya, *Japan's Foreign Exchange and Her Balance of International Payments* (New York, 1928), chap. ii dealing with pre-World War I and chaps. iv and v dealing with the 1920's.

It was not until 1932 and thereafter that the merchandise deficit shrank to such small dimensions, and the surplus in invisibles (including foreign-investment income) rose to such heights, as to permit a net surplus on current account.⁹³ It is not entirely clear that these phenomena of the thirties represented a new stage of maturity in Japan's evolution, for there were special factors here too: the depreciation of the yen, the world-wide intense depression, and the early shift to a war economy. But it is significant that a period of over thirty years (from the beginning of regular foreign borrowing in 1897 to the early 1930's) was required before the Japanese economy showed for several successive years the capacity for currently financing its own development and servicing its outstanding debts without recourse to new capital inflows or dependence on extraordinary events like World War I.

THE TYPES AND USES OF FOREIGN-CAPITAL INFLOW

The contribution of the limited volume of foreign-capital inflow to resolving the problems of development depended in large part upon the channels and direction of the inflow. The Japanese economy secured the bulk of its foreign capital through the channel of government borrowing abroad. This type of inflow, which was appropriate for the vigorous Japanese government, made funds available for the macroproblems as well as the micro-obstacles over the long period of Japan's dependence on external assistance.

During the nineteenth century the Japanese themselves showed hostility to foreign capital. In part this was a dread of political or economic subordination: the experience of China, Egypt, and Turkey was taken to show that foreign debt led to domination by foreign powers. In part also the fear of external borrowing arose from lack of confidence in the economy's ability to service a heavier debt. These fears, which diminished in later years of advancing economic and military strength, were finally thrust aside by the necessities of developmental action.

The following tabulation gives the relative shares of foreign-capital inflow into Japan during 1896-1913.⁹⁴

Foreign borrowings	94.5%
By national and municipal governments	85.0%
By Japanese corporations	9.5%
Direct investments by foreigners	5.5%
TOTAL	100.0%

It is evident that loans entirely overshadowed direct investments by foreigners and that government action secured by far the bulk of the foreign capital. Even within the corporate sphere, borrowing preponder-

⁹³ See Table VI.2.

⁹⁴ Based on data cited in the section on Relative Magnitude of the Foreign-Capital Inflow, above.

ated over entrepreneurial investment, and—as shown below—the “corporate” borrowers were essentially government agencies. Thus, in terms of volume, direct investment was a minor agent during this period of Japan’s development, although qualitatively it was somewhat more important.

The London money market was by far the chief source of loan funds for Japan during this period. Flotations in francs did not begin until 1909, and in dollars until the 1920’s. There were no notable differences between the British and the French financing as regards interest rates and discounts, but a number of the franc loans carried relatively short maturities (about ten years) in contrast to terms of twenty to thirty years for comparable sterling loans. American capitalists were relatively more important in the small area of direct investments, and increased this share in the 1920’s.

Direct Investments

The interest which foreign individuals and firms displayed in direct investments in Japan was very limited and uncertain. Japan was a remote and unfamiliar country, suspicious of foreigners, and lacking the rich concentrations of raw materials which were attractive in other underdeveloped regions. During Period I direct investments were concentrated in foreign trade and its financing. These activities did directly promote Japan’s foreign trade and indirectly gave some stimulation to output, but failed to contribute directly to the expansion of productive capacity (with the notable exception of silk). Late in Period II, when the Japanese had already demonstrated their general progressive drive and their specific industrial aptitudes, direct foreign investments in manufacturing began to appear.

Specific legal obstacles tended to keep most foreigners out of agriculture, mining, and transportation, and wherever land ownership was involved.⁹⁵ In addition there was a general social prejudice, underlying the legal provisions, against the presence and activities of foreigners, and this prejudice had not been eradicated by the turn of the century, especially in the interior of the country.⁹⁶ In the industrial field the most successful adaptation to native attitudes appears to have been the “joint companies” by which foreign capital, and sometimes foreign management and technicians, participated in existing or new Japanese corporations. The industrial investments came only in small part from foreign individuals, the

⁹⁵ Since early times, foreigners had been prohibited from acquiring land or engaging in mining. While juridical persons, formed under Japanese law, were free of these prohibitions, and after 1900 foreigners were explicitly invited to form such organizations, foreigners were naturally apprehensive of the consequences of a liquidation of such an enterprise by forced sale. See *U. S. Consular Reports*, LXX, No. 267 (Dec., 1902), 446-447.

⁹⁶ Cf. *U. S. Consular Reports*, LXIII, No. 238 (July, 1900), 399-400.

bulk being provided by foreign firms in the same product lines, and consisted partly of patent rights, partly of cash.

The operation of these joint Japanese foreign firms is a revealing story of technical co-operation for mutual benefit.⁹⁷ Along with patent rights, the Japanese partner acquired the privilege of sending Japanese engineers to study in the plants of the Western partner. The latter also furnished managerial assistance, especially in the early stages of organization. In more mature stages, the leading strings were relaxed; for example, the Japanese interests of the General Electric Company came to be represented simply "by having American members on the boards of directors of these [joint] firms, but the general daily business of the companies is entirely managed by Japanese officials." Reporting on the operation of this partnership, a representative of the General Electric Company in Japan stated in 1920:

"The partnership between Americans and Japanese in the electrical business is no mere experiment; it has been attended with unvarying success for the fifteen years of its existence and with marked financial benefit to both parties."⁹⁸

In both the joint enterprises and the wholly foreign undertakings, of whatever nationality, a prime contribution was the technical knowledge and skill which nowadays are termed "know-how"; but even more important was the sheer impact of innovation.⁹⁹ The direct examples—virtually "demonstration projects"—of foreign techniques and management were a repeated stimulus to Japanese thinking and helped prevent a premature halt in modernization. At the same time it was fortunate for Japan's long-term development that foreigners and their undertakings did not come in such large numbers as to pre-empt the best opportunities and stifle native enterprise.

The investment cost to Japan, measured in simple terms of the rate of remitted returns, was far higher for direct investments than for loans. Reference has been made above to an 8-per-cent average return (remitted abroad) on direct investments. Company dividend figures suggest a far higher rate of return in many of the companies, ranging in individual cases as high as 20 per cent on capital stock.¹⁰⁰ In addition, the ownership of shares (and hence the claims on dividends) by the foreign investors represented a considerably smaller amount of cash investment (since the remainder was valued in patent rights).

⁹⁷ There were presumably in addition the commercial aims of division of markets, elimination of price competition, and other goals of market strategy.

⁹⁸ The foregoing details are taken from G. Odate, *Japan's Financial Relations with the United States* (New York, 1922), pp. 104-106.

⁹⁹ For contemporary comments to this effect, see *Japan Yearbook*, 1915, pp. 404, 406.

¹⁰⁰ *Japan's Financial Relations with the United States*, loc. cit.

Corporate Foreign Loans

Turning now from the direct investments to the foreign borrowings by Japanese corporations, we find from the individual transactions¹⁰¹ that most of the funds in this category went to banks and colonial development companies, which were semigovernmental agencies. Thus the "private" borrowings turn out to be on the whole an indirect form of government borrowing, and must be viewed in relation to the whole complex of government programs and agencies. As Allen says of the Industrial Bank of Japan, established in 1900:

"It was empowered to raise funds by issuing debentures up to ten times its paid-up capital, and its shareholders received a Government guarantee of dividends similar to that given to the Hypothec Bank. In the early days of its operation the Bank's loans were made for the most part to firms in the newly established large-scale industries, such as the public utilities and the ship-building, iron and steel, chemical and machine-making trades. In this way it served to assist the Government's policy of developing the new forms of industrial activities that were believed to be necessary for political as well as for economic reasons. The term of these loans was usually five years, although in the case of advances on ships, repayment could be effected in annual installments over a period of fifteen years. One very important function assumed by this bank was that of providing a channel for foreign investment in Japan. A substantial part of its capital was held by foreigners, and during the first eleven years of its existence some 350 million yen were raised abroad by the sale in foreign capital markets either of its own debentures or of those of municipalities or of public undertakings with which it was associated. Among the latter the South Manchuria Railway Company had an important place, and the bank guaranteed and sold several issues of S.M.R. sterling debentures in London between 1907 and 1911. Its financial relations with this company were a precursor of its later activities in the financing of Japanese penetration on the Continent of Asia."¹⁰²

Much the same is true of the Hokkaido Colonial Bank and the Oriental Development Company. In fact all these institutions formed part of a network of developmental organs which included the Yokohama Specie Bank (engaged in handling foreign exchange), the Hypothec Bank of Japan (which dealt in loans on agricultural and other immovable property), and indeed the central Bank of Japan, which advanced funds to these banks, discounted their paper at specially low rates, and gave them general support.

¹⁰¹ Listed in Moulton, *op. cit.*, p. 378.

¹⁰² G. C. Allen, *A Short Economic History of Modern Japan, 1867-1937* (London, 1946), p. 49.

The interest charges, discounts and commissions, and amortization rates on these "private" loans were quite low. Undoubtedly the association of the borrowers with the government, plus the specifically productive uses intended for the funds, contributed to these favorable terms. Stated interest rates were generally 4.5 per cent or 5 per cent. Issue prices ranged from 96.75 to 98.5—with a single exception at 91⅞. Commissions were moderate: apparently about 5 per cent. In consequence of these discount and commission terms, the net proceeds of these borrowings averaged 92.32 per cent of the face value. Amortization terms, however, were inferior to those on government foreign loans.¹⁰³

This kind of borrowing was apparently popular abroad and secured repeated inflows of foreign capital. There were altogether four successive flotations by the South Manchurian Railway during this period: in 1907, in June and again in December of 1908, and in 1911. Two of the other borrowers, the Industrial Bank of Japan and the Oriental Development Company, also made further flotations abroad during the 1920's.

Government Foreign Loans

Government borrowing, which provided the bulk of the foreign capital during Period II, the government's disposition of these funds, and its control over the total impact on the economy, may be examined under three headings: (1) reservations of funds; (2) directed uses (control of foreign exchange made available for imports); and (3) general uses (additions to general funds of government and private sectors).

(1) The principal *reservation* of funds consisted in the accumulation of specie balances. The balances held abroad rose greatly during the Russo-Japanese War, when about two-fifths of the proceeds of the large foreign loans floated at that time was left in foreign money markets. The holdings abroad were then drawn down during 1907-13. On balance, from 1904 to 1913, specie holdings abroad were increased by ¥ 227 million while holdings at home were increased by ¥ 30 million net inflow of specie from abroad;¹⁰⁴ this accounts for a little over one-sixth of the total foreign loans by government during this period. The holding of specie abroad was a useful practice for Japan in the circumstances then prevailing, since foreign payments tended to fluctuate considerably from year to year, largely because of seasonal and cyclical variations in the silk export market.¹⁰⁵

¹⁰³ *Financial and Economic Annual*, 1915, pp. 82-83, discloses that private bonds were issued for an average period of 10 to 20 years; rarely were bonds issued with a life of 30 or more years; and repayment began within 1 to 3 years of the issue date. In contrast, government bonds (*ibid.*, pp. 30-31) were issued for 20 to 60 years; and amortization was often postponed for 10 to 15 years.

¹⁰⁴ Moulton, *op. cit.*, p. 385. The term "specie" as used here refers to silver as well as gold: the substantial gold outflow was overbalanced by the huge silver inflow.

¹⁰⁵ "The existence of a substantial gold balance abroad eliminated the necessity for large imports and exports of gold at irregular intervals, a process which would

Another reservation of funds is suggested by the municipal borrowings, which were entirely intended for public works: waterworks, harborworks, streets, tramways, gasworks, electric power, irrigation, etc.¹⁰⁶ However, this category of borrowing was relatively small: little more than one-tenth of the total governmental foreign loans. Furthermore, the foreign exchange in question was not really reserved, for only a small share of the expenditure for these basic works went directly for imported capital goods, the remainder being spent in yen for local materials and construction work. Such local currency was obtained by selling the proceeds of the foreign loans in the foreign-exchange market, which put them to general economic purposes.

A similar qualification, likewise distinguishing between financial means and real imports, applies to the national government's loans and their intended disposition.¹⁰⁷ In particular, the military purposes—which were a principal immediate object of these loans—absorbed directly only a small share of the foreign exchange thus obtained, as indicated above. The bulk of the foreign funds passed through the general economy.

(2) Among the *directed* uses of foreign loans, one might expect to find exchange controls of various kinds covering the disposition of foreign-loan proceeds when made available to commercial importers. However, no evidence has been found that such devices were employed during this period, when free exchange markets were maintained and the modern techniques of central control over foreign-exchange resources were virtually unknown. The most that appears along these lines is the promotion of exports in general by enabling the Yokohama Specie Bank to set relatively low rates of discount on export bills.¹⁰⁸ Indeed, one analyst complains

have been slow and expensive for a country as distant as Japan from important world money markets" (Schumpeter *et al.*, *op. cit.*, p. 870). Furthermore, the gold held abroad was not wholly idle, since it served as part of the specie reserve behind the note issue of the Bank of Japan.

¹⁰⁶ Moulton, *op. cit.*, p. 377.

¹⁰⁷ Cf. the listing of "National Debts Classified according to the Objects for Which They Were Raised," in the *Financial and Economic Annuals*. This listing, under the headings "Reorganization of Public Institutions," "Economic Undertakings," "Military Affairs," "Financial Adjustment," and "Exploitation of New Territory," with the various foreign loans and domestic loans distributed piecemeal under the various headings, certainly indicates the immediate disposition of the accounts, but gives little clue to their significance in the aggregate economy. Most of the items listed, even those under "Economic Undertakings," are transfer payments of one kind or another.

¹⁰⁸ See U. S. National Monetary Commission, *Publications*, XVIII (1911), 198-199, where this system is discussed as a covert mode of subsidizing export competition, and a rationale for it is found in Japan's unfavorable balance of trade; see also S. Y. Furuya, *Japan's Foreign Exchange and Her Balance of Payments* (New York, 1928), pp. 55-56, for a less sympathetic view.

It is possible that the foreign-exchange banks discriminated in favor of certain importations by variations in discount rates, but such practices were not very important, according to a former official of the Bank of Japan, in private conversation with the writer.

that the Bank of Japan "has entirely failed in directing the surplus of domestic funds to the needs of financing foreign trade and in directing the surplus of foreign funds to the needs of financing domestic trade and industries."¹⁰⁹

It follows from the foregoing that if any important control over the use of foreign-exchange proceeds is to be found, it must be sought in the addition of foreign capital to the general financial resources of the government (over and above the service cost of that capital) and in the general governmental policies promoting and directing industrialization and the whole expansion of production.

(3) By means of external borrowing during Period II, the government and its semiofficial agencies were able to obtain for the economy the foreign capital which was not ready to come into private ventures in such volume or variety of uses at that time. The government's growing prestige and its record of honoring all its external financial obligations enabled it to tap the large supply of international loan funds in that era. Furthermore, the Japanese were able to seek external assistance at times of severest national stringency, which are usually the very occasions when direct investors are least interested in making commitments. Equally important was the freedom to employ loan proceeds for the general needs of the developing economy: in establishing essential but non-profit-making services, in pioneering some of the more difficult enterprises in the profit-making sector, in fighting inflationary pressures, and in closing the gap in the whole balance of payments. Few of the loans were tied to specific uses by contract with the lenders. Limitation of foreign assistance to capital-goods imports for specified projects, as sometimes advocated and often practiced nowadays,¹¹⁰ would not have closed the aggregate gap in the balance of payments, unless service charges on the foreign capital had been nil or indefinitely deferred. In addition, if all the foreign funds had been limited to capital-goods imports plus interest payments, by agreement *ex ante* and not merely by results *ex post*, the probable effect would have been to aggravate the inflationary and foreign-exchange pressures, by reason of additional demand induced long before the new projects began to yield output. In actual fact, the bulk of the foreign capital joined the aggregate of the country's foreign-exchange supply, which was subject chiefly to the government's general policies influencing the preferred types and fields of economic activity.

¹⁰⁹ Furuya, *op. cit.*, p. 160.

¹¹⁰ The International Bank for Reconstruction and Development has often been accused of following this principle; the Bank itself has alternately upheld the practicality of this principle and denied being confined to it. The Bank's lending policy since 1950 has showed some liberalization of the criteria by which it implements its "Articles of Agreement"; in particular, the 1952 credits to Italy and to the Belgian Congo were intended to help meet general import pressures arising from broad developmental programs (see I. B. R. D., *Seventh Annual Report*, 1951-1952, Washington, 1952, pp. 14, 24).

The foreign loans served to strengthen the domestic agencies of modernization as well as to provide goods and services of desired types. The central government, which was indefatigable in pioneering economic development and in supporting its progress,¹¹¹ relied on foreign borrowing for between one-fifth and one-sixth of its total funds. The semigovernmental banks, largely engaged in financing developmental work, and the municipalities, involved in various public-utility enterprises, also leaned heavily on foreign funds. Not only these deliberate agencies of development, but also the private-capital market felt the beneficial effect of foreign loans. For the government's direct expenditures abroad absorbed only a moderate portion of its foreign borrowings, the remainder being exchanged for domestic currency from time to time, and so made available to private importers. The medium of this operation was the Yokohama Specie Bank and the commercial banks, which thus were at the same time enabled to build up reserves and expand credit resources. The timing of these releases of foreign exchange provided a rudimentary anticyclical device (which unfortunately backfired on one or two occasions), as well as a more general support of the exchange rate and the gold reserve. Because of its foreign borrowings, the Japanese government was able to stay out of the domestic-capital market, leaving it almost entirely to private enterprise.

Loans were nearly on a par with direct investments in regard to debt service. Indeed, the rate of return was much lower on the former: an effective interest rate averaging only 5 per cent, in contrast to profit remittances averaging at least 8 per cent on direct investments. While interest obligations were inflexible over the years, profit remittances were hardly more flexible, showing little if any correlation with easiness in the balance of payments. The lack of accommodation in the direct investments may be traced in large part to the fields of investment: since they were not concentrated in the extraction of raw materials for export, they did not tend automatically to provide the means of their own service.

The net inflows of foreign capital during the 1920's differed significantly from the prewar inflows, as regards channels and directions. In the first place, the share of direct investments in the total rose considerably although the great bulk of the inflow still consisted in loan funds, as before.¹¹² In the second place, the loan funds were no longer predomi-

¹¹¹ In countries where the government is unable or unwilling to show the same degree of vigor in promoting economic development, there is need of a more organized approach by outside agencies, such as is provided today by the International Bank and by the Mutual Security Administration. But such external assistance should be broad in scope, commensurate with the general purposes served by Japan's foreign borrowings.

¹¹² The inflow of loan funds (net of repatriations and net of discounts and commissions, but not net of Japanese investments abroad) during 1923-29 amounted to ¥ 656 million (Moulton, *op. cit.*, p. 400). The increment in direct investments is given by Moulton as ¥ 100 million (*op. cit.*, p. 401), but probably was closer to ¥ 200 million (in view of the data on U. S. direct investments alone, as indicated

nantly government flotations. Only about 16 per cent of the total loans were issued by the national government, and another 14 per cent by the municipalities. Finally, in the total volume of the corporate obligations, less than one-third were issues of semigovernmental agencies, while the bulk consisted of issues of public utilities (chiefly electric light and power companies).¹¹³

These shifts in the character of foreign-capital inflow reflect in part the improved status of the Japanese private economy in the eyes of foreign investors. The prewar efforts of the Japanese government to promote modernization of the country were now beginning to pay off in providing a kind of "favorable climate for private investment." It is also significant that the public-utility issues, which dominated the capital inflow during the twenties, did not arise primarily from importation of capital goods for specific public-utility projects, but rather from the general difficulty of assembling large sums of capital in the domestic economy after the great earthquake of 1923.¹¹⁴ Consequently the proceeds of these private loans were in large part sold domestically for yen, and thus served to enlarge the nation's resources of foreign exchange available for general imports. In this respect, these private loans performed much the same function as the government borrowings before and after World War I.

It was fortunate for Japan that the world economy stood ready, during the first three decades of the twentieth century, to provide international capital flows of types and quantities well suited to the needs of this developing country and its capacity to absorb those funds. So long as underdeveloped countries today face a restricted supply of private international funds, far short of the total demand for international capital, they must draw more heavily on aid from foreign governments and from suitably oriented international agencies, or else must trim their domestic policies to more modest goals.

CONCLUSION

In broad perspective, the vigor and continuity of the developmental process in Japan depended upon a condition of limited "secular disequilib-

in *Japan's Financial Relations with the United States, loc. cit.*, and in view of the discrepancy of ¥ 170 million remaining between the balance of current items and the balance of capital movements for 1924-29, as shown in the Schumpeter end-paper tables, which omit the category of direct investments). If Moulton's estimate of the direct investment is adopted, this category accounted for not quite one-seventh of the capital inflow; if the higher estimate is adopted, the share of the total was nearly one-fourth. In contrast, the corresponding share during 1896-1913 had been only about one-fifteenth.

¹¹³ These breakdowns are derived from the data given in Moulton, *op. cit.*, pp. 378-380.

¹¹⁴ See *Oriental Economist*, Jan. 14, 1950, pp. 32-33, commenting on the power-company loans during the 1920's. Effective rates of interest on these foreign bond issues in the 1920's were actually higher than pre-World War I rates, although lower than domestic rates in the twenties.

rium." On the one hand, there was a persistent excess of demand over supply in nearly all economic relations. These imbalances were great enough to provide the incentives for the technological and commercial innovations, the reallocation of resources, and the expansion of production. On the other hand, the imbalances remained within "limits of tolerance," beyond which the developmental movement would have been choked off by physical bottlenecks and social resistance, or abandoned in favor of speculation, capital flight, and other primarily financial manipulations.¹¹⁵

The disequilibrium was not simply a matter of "maladjustments" or "frictions," to be corrected or removed as the various forces worked out improved adaptations to each other. The imbalances were deep-seated and long-term. Arising from the demand for economic progress and the strain of rapid development in a society which was relatively poor and immobile, the imbalances formed part and parcel of the developmental process. In the course of this process, the gap between demand and supply was narrowed in some areas, but elsewhere new disequilibria were created and certain previous imbalances were intensified. So long as the disequilibrium of demand and supply could be sustained, but limited, the developmental process continued.

This pattern of disequilibrium produced the need for external aid and measured its essential contribution. Foreign capital did not enter Japan in such volume as to wipe out the imbalances. But it flowed in sufficient magnitude and flexibility to keep the disequilibrium from getting out of hand and to help carry the developmental process to an advanced stage.

¹¹⁵ The short-term concept of a disequilibrium situation, its contribution to the reallocation of resources, and its limits of tolerance have been worked out for the U. S. economy during World War II in a perceptive article by J. K. Galbraith, "The Disequilibrium System," in *American Economic Review*, XXXVII (June, 1947), 287-302. Long-term disequilibrium, especially the problems of insufficient imbalance, was examined in dynamic terms by Thorstein Veblen in *Imperial Germany and the Industrial Revolution* (New York, 1915), chap. vi, stressing the deceleration of growth in Germany as supply rose relative to demand.

PART TWO

DEMOGRAPHIC FACTORS AND
ECONOMIC GROWTH

Population and Labor Force in Relation to Economic Growth

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MOST STUDENTS of economic growth acknowledge the importance of population trends as a prime variable in any system of analysis, prediction, or strategy. Here the agreement essentially ends. Are population trends virtually autonomous or dependent variables? Is population chiefly significant as number of consumers, as the Malthusian position would imply, or as potential producers? Does rapid population growth have a stimulating or retarding effect on the economy? These questions do not receive uniform answers, and some are certainly unanswerable without qualifying the questions as well as examining the evidence.

This essay is designed to explore comparisons among population trends in Brazil, India, and Japan, and to set these comparisons within a more general framework. It is not proposed here to "review the literature"¹ on the relations between population on the one hand and economic and social organization on the other. The intention here is rather to summarize briefly some problems of comparison and generalization, and the ways the trends in total population and its composition interact with economic trends.

PROBLEMS OF COMPARISON AND GENERALIZATION

The three countries with which this volume is concerned provide a serious challenge to generalization. They were selected for comparative scrutiny partly for this reason. Besides the many things that they share as human societies, there are a number of obviously significant respects in which they differ.

Two differences are of special relevance in the present context. First, in the trends of the components of population size—births, deaths, and migration—Brazil, India, and Japan have had quite different historical experience. The populations of all three countries have grown rapidly during the present century, but the elements of that growth and its sig-

¹ An extensive and relatively comprehensive coverage of the relevant literature is available in *The Determinants and the Consequences of Population Trends*, published by the United Nations, New York, 1953.

nificance for the economy have been quite unequal. Japan's rapid growth has derived from the "standard" gap between declining mortality and declining fertility in the course of economic modernization, and in crude outline has repeated earlier experience in Western industrial countries. India's growth has been more recent and has derived from mortality reductions through famine control and elementary public-health measures, with some doubt as to whether the social and economic systems have been sufficiently modified to set in train the rest of the vital revolution—reduced fertility. Brazil's growth apparently has a fairly long history, despite continuing high mortality, but has followed the New World pattern of expansion in an "empty" territory both through high fertility and continuing immigration. India and Japan have been suppliers of migrants, although only in the latter has the emigration been of marked significance for the composition of the home population. Brazil as a recipient of migrants has clearly had both size and composition of its population affected in marked degree by them.

Second, the three countries presently or historically differ in the significance of growth for the traditional ratio of population and means for subsistence. Japan and India were relatively densely settled countries before the modern period of rapid growth, although both have had some "internal frontiers" for settlement and marginal exploitation. Brazil is in terms of crude density figures still a relatively "empty" country, although closer settlement of great areas of the country will require exceptional capital outlays.

This sketchy summary of differences in the demographic situation of the three countries prompts some more general comments about difficulties in comparison and generalization.

Some problems of statistical comparison may be regarded as essentially administrative and technical. Data may be collected and reported for a variety of local or simply whimsical reasons. Census counts and the registration of births and deaths may be incomplete and inaccurate in serious if unknown degrees. The categories of observation, such as the social and economic composition of a population, are changed through time, so that successive "improvements" impair comparability. To the extent that the real phenomena are alike, the character of the reports then requires the cautious ingenuity of the researcher to reconstruct the reported data. Of facts about population, some have a reasonably constant meaning: numbers, births, deaths, age, and sex. The technical and administrative sources of difficulty become intermixed with more fundamental problems of comparability beyond these categories, as will be noted below.

A somewhat similar problem of comparability arises with regard to the length and adequacy of the historical record. The collection and reporting of various social quantities are developments closely related to social and economic modernization, as Professor Kuznets has pointed out in his paper in Part I. This means that the data are least available and

reliable where they are most needed for the study of economic development.

Each of the standard devices for historical extrapolation or interpolation of data is beset with hazards. Most of the devices involve reasoning by analogy: supplying the missing figure from regressions established where more indexes are available, or the substitution of cross-sectional comparisons for temporal ones. It is possible, for example, to divide the countries of the world into two or more economic-development categories and within each category to establish high intercorrelations among available demographic, economic, and social indexes.² In the absence of actual historical data on trends in these indexes, country by country, one may jump to the conclusion that all change together without leads or lags, and that the strategy of modernization requires doing everything at once,³ or, more logically, of selecting any variable at random as the key to the whole. None of these assumptions squares with our knowledge of the looseness of that functional system we call a society, or the variability of temporal sequences where they are known.

Two other difficulties in comparison and generalization may be noted briefly. The one relates to the difficulty of reducing qualitative differences to quantities amenable to statistical treatment. There is, for example, no neat, quantitative index of social stratification that permits us to compare the relatively rigid social structure of India and Japan with the relatively open class system of Brazil. Ideally, one would like to know something more than class or caste differences in vital rates; one would like to analyze the relation between demographic trends and *changes* in the class structure.

The other problem is closely related. No amount of manipulation or administrative agreement will make genuine differences in social structures more than spuriously comparable by calling different phenomena the same names. Many of the categories useful for comparison of demographic and economic trends are appropriate only to societies or sectors of societies that exhibit forms of specialized economic activity characteristic of industrial or at least commercial economic systems. The distinction between economically active and inactive sectors of a population strictly depends upon the availability of some form of "market test."⁴ Occupational and even industrial classifications of a population may yield results of dubious significance if great reliance is placed on the uniformity of the categories.

As a general rule, for comparisons of trends for countries as various as Brazil, India, and Japan, or the wider range of situations from which these are drawn, the simple classifications are also the most reliable. Rural-urban, agricultural-nonagricultural, literate-illiterate—these distinctions are not absolutely above suspicion in detail, but are likely to allow comparisons

² See, for example, A. J. Jaffe and Charles D. Stewart, *Manpower Resources and Utilization* (New York, 1951), pp. 401-414.

³ *Ibid.*, p. 411.

⁴ See the writer's "The Exportability of the Labor Force Concept," *American Sociological Review*, XVIII (1953), 68-72.

of greater reliability than do more elaborate distinctions useful for more limited and intensive analysis. It is perhaps characteristic of social scientists generally, reflecting in part the abundant and specialized data of the countries where they work, that they constantly are tempted to use a more elaborate conceptual apparatus than is necessary or even relevant for purposes of broad comparative studies.

The seriousness of these problems of comparability and generalization depends in some measure on the purpose at hand. For the shaping of economic policy in Brazil or India, the unique features of the present or past may have at least as much relevance as the general laws of economic growth if such can be abstracted from the particulars. It does appear, however, that even for the strategy of development in a particular country, general relationships and the sorting out of key variables subject to manipulation can be recommended on grounds of efficiency as well as purely scientific inquiry.

In the remainder of this essay an attempt will be made to state in rather general terms what is known or needs to be known about demographic factors in economic development. In the present state of knowledge and of the writer's competence, the general statements here do not constitute an effective substitute for the excellent and detailed analyses of Smith, Davis, and Taeuber in the papers that follow.

TRENDS IN TOTAL POPULATION

The populations of Brazil, India, and Japan have all departed from the category of "potentially rapid growth" implicit in high fertility balanced by high mortality. All three have actually grown rapidly for at least several decades. Only in Japan has fertility been substantially eroded, and even there recent crude birth rates have been high, owing partly to the age structure of the population.

In the three countries the recent growth has actually been most rapid in Brazil, on a relatively small population base and in sparsely settled territory, least rapid in India, where mortality has yielded the least. New postwar attacks on mortality in Japan, plus a resurgence of birth rates, have added new numbers to a country depleted in territory, capital, and markets.

What has been the experience of the three countries with respect to the relation of population growth to economic welfare? Again, the answers must differ. Probably in Brazil and certainly in Japan rapid growth of population has been accompanied by rising real income per capita. Davis argues persuasively in his paper that economic expansion in India has just about kept pace with population growth. He also argues that the economic expansion was not the direct result of population growth and therefore that the increased numbers essentially used up gains that otherwise could have resulted in improved levels of living.

The circumstance that net economic development has accompanied

population growth in Brazil and Japan does not prove anything about the relationship, of course. Since an expanding population will normally provide more producers as well as, automatically, more consumers, the relation between demographic and economic growth will depend in part on the proportion, types, and uses of producers, discussed in the following section. On the basis of the evidence with regard to the two countries immediately in question, the guess may be hazarded that the magnitude of the population growth in Japan retarded the rise of real income per capita, but that population growth in Brazil, which has derived in part from immigration of persons of working ages, may have aided net improvement in levels of living.⁵

The significance of rapid population growth is not confined to the past. If we leave aside the case of Japan as a country which seemed by 1940 to have essentially accomplished both an industrial revolution and a demographic revolution roughly on the pattern established in the West and at greater speed, what of countries like Brazil and India which are at a much earlier stage of development? For densely settled agrarian countries like India the prognosis is far from favorable. Continuation of the rather modest rate of growth of the present century or the more rapid growth of recent decades would double the population in forty to sixty-five years. For the immediate future the growth may well be accelerated rather than diminished, as mortality remains high. The prospective situation in Brazil is not fundamentally different except in the sense of the time at which difficulties can be predicted under the assumption of reduced mortality and continuing high fertility.

The demographic experience of Japan and the industrial West provides no basis for optimism for India and countries similarly situated.⁶ The gap between declining mortality and declining fertility in the West resulted in a threefold increase in Western Europe populations in the home countries, an eightfold increase of populations of European stocks. The increasing populations settled empty areas and the industrial and commercial cities. The expansion of commerce and industry was even more rapid than population growth.

The populations of the densely settled agrarian countries represent a much larger proportion of the world's total. For population growth to be accompanied by rising or even constant levels of consumption, capital development and expansion of trade that is totally unprecedented would be required.

Two considerations make the situation even less favorable. The sheer problem of expansion of agricultural production is acute where intensive

⁵ This is suggested by George J. Stolnitz in an unpublished discussion of the paper by T. Lynn Smith in this volume.

⁶ The summary in this and following paragraphs essentially follows Frank W. Notestein, "Economic Problems of Population Change," paper read at the Eighth International Conference of Agricultural Economists, Michigan State College, Aug. 15-22, 1952.

agriculture already prevails. It is not simply productivity per man but total production that must be expanded. Labor is not in short supply, and it is doubtful that additional units of labor can add appreciably to total output and they will almost certainly reduce output per capita. In other words, the low levels of living, overabundant and underemployed labor, and dense settlement provide in combination a substantial depressant on the possibilities of economic expansion.

The second consideration is the modern course of mortality. Health and longevity are universal values, and measures to heal the sick and save lives are likely to meet with only modest resistance directed at particular techniques, if any at all. Modern innovations in sanitation, water supply, control of contagious diseases through antibiotics and inoculation, and control of malaria through DDT can reduce a death rate with great rapidity and virtually no impact on traditional forms of social organization. Thus again, if the demographic revolution is to be accomplished without an impossibly large expansion of population or without a reversal upward of mortality trends, it must be more rapid than any previous experience.

The case here has been argued with India as the example, an example appropriate to over half of the world's population, because in both magnitude and time it is the crucial situation. However, it does not appear that in Brazil, or much of Africa and Latin America, the prognosis is wholly favorable either. If major inroads are made on high mortality rates without a disproportionately rapid capital expansion in agriculture and industry, population growth may there also provide a retarding influence on economic development.

One question remains before attention is turned from total population to its composition. That question relates to the possibility of rapid reduction in fertility. The experience of Japan and the West is that the motives appropriate to family limitation arise out of the spatial and occupational mobility associated with urbanization and industrialization.⁷ In the absence of such counterpressures, it has been argued, traditional norms and social arrangements in all societies favor high fertility. This line of argument has been used both to explain the observed lag between reductions in mortality and fertility in the developed countries and to predict similar lags in undeveloped countries. The first part of the proposition may be true, as all evidence indicates, without the second part following. For the prediction about contemporary undeveloped countries rests in part on the unstated assumption that they are in their pristine state, untouched by the course of world political and economic events of the last century.

Social scientists, and particularly anthropologists and sociologists, have

⁷ In this regard Japanese experience is instructive, for fertility reduction took place with less obvious shattering of traditional kinship organization than has been true in the West. However, the Western family type, involving substantial separation of the generations and of the immediate family from extended kinship ties, did appear in the largest cities and in the recruitment practices of the army and largest industries.

developed a kind of vested interest in emphasis on resistances to change inherent in stable social structures. The generalization is valid enough, but may blind the observer to changes of internal and external origin that have taken place and that cast in doubt the aptness of the qualifier "stable." Even changes that do not initially interfere with social arrangements, such as the mortality controls already discussed, have structural effects. In India, for example, worsening man-land ratios deriving from reduced mortality and the destruction of the handicrafter's market by cheap manufactured products sooner or later must be evident to the most obtuse, fatalistic, and tradition-ridden villager.

There is a growing body of evidence that the motivational resistance to fertility control in agrarian societies has been overstated. There is also some hint from studies in Puerto Rico and the Far East that, contrary to a commonly accepted generalization, males rather than females constitute the conservatives, at least on this question.

The notion that rapid reduction of fertility is impossible, and particularly in an agrarian setting, apparently rests also on another assumption that is even more suspect—the doctrine of cultural autonomy or noninterference. The ill-concealed nostalgia for exotic varieties of social organization may lead to policies of avoiding interference in native customs. These policies are fruitless in the gross, possibly pernicious in the fine. Primitive and agrarian societies have been interfered with, and will be, both by foreign traders, governors, and missionaries (and students of their cultures), and by domestic leaders. The very scholars and officials who promote health measures, literacy, new occupational skills, heightened economic aspirations, and "civilized" moral conduct will argue that they must not intrude in other aspects of life. Since there are functional connections among the elements of a social structure, such a position is naïve at best. The point of present interest is that the reluctance to tamper with family organization and practices places possibly unnecessary strains on the social system's adaptation to other changes.

It is unquestionably true that changes of knowledge and attitude with reference to fertility pose special problems because of the personal, intimate, and value-laden character of sexual conduct. The agencies of innovation and the techniques of influencing beliefs and practices need special attention. The question under discussion, however, is the feasibility of promoting fertility reduction without relying solely on indirect effects of economic growth. The importance of the question derives from the likelihood that economic growth itself may be seriously hampered or even subverted in the absence of rapid and concurrent reduction in birth rates. The suggested answer to the question is more nearly affirmative than much of the discussion of the problem implies.

POPULATION OF WORKING AGES

The assumption that each person in a population counts as one as a consumer is of course not accurate. Differences in income and habits of consumption exist in all societies. A rising average level of consumption may in fact derive from a growing spread in income distributions so that the rich get richer and the poor if anything poorer while the country depletes its irreplaceable resources and room for expansion. The averaging technique is not even approximately appropriate for the analysis of the significance of demographic changes for the number and quality of producers.

Neither the number nor the occupational distribution of producers is an exclusively demographic variable. The population of working ages, somewhat arbitrarily defined, is the product of past events in births, deaths, and migratory movements. The proportion of that population that is "economically active" (where such a distinction can be reliably made) is primarily influenced by social and economic organizations. The occupational and industrial distribution of that population is even less directly traceable to population size and trends as such.

If we treat demographic changes as independent variables and changing age structures as reliable indicators of the ratio of workers to dependents, certain recurrent patterns are evident and are relevant to the problems of economic growth. The experience of Japan and the West indicates that mortality is reduced before fertility, and the evidence to date in Brazil and India indicates a grossly similar experience at comparable stages. Now a population maintained by high fertility and kept in balance by high mortality has an unfavorable ratio of working-age populations to dependents (largely children) as compared with populations with low mortality and fertility. Initial reductions of mortality will worsen the ratio, particularly as the highest age-specific mortality rates prior to old age are likely to be among infants and children, and these are likely to fall fastest. Although the long-run effect of keeping babies and children alive may be favorable in avoiding the great social waste of supporting dependents who do not live to become producers, the short-run effect is clearly to increase the burden of dependency.⁸

Brazil, India, and Japan illustrate both the demographic and the socio-economic aspects of the number and characteristics of producers. In the process of demographic transition Japan experienced a rising dependency ratio, and then, with falling birth rates, a heavy concentration of population of working ages. Taeuber's paper provides a detailed analysis of how that rapidly growing manpower was used. India's rate of mortality reduction so far has been slight, but has almost certainly resulted in a

⁸ For a fuller exposition of the points noted here and throughout this section, see John D. Durand, "Population Structure as a Factor in Manpower and Dependency Problems of Under-developed Countries," *United Nations, Population Bulletin*, No. 3, Oct., 1953, pp. 1-16. See also Frank Lorimer, "Dynamics of Age and Mortality," *United Nations Population Bulletin*, No. 1, Dec., 1951, pp. 31-41.

larger proportion of young dependents. Brazil's native-born population has probably followed a similar course; a heavy influx of adult immigrants has served if anything to shift the balance in the opposite direction, while also adding of course to the population of reproductive ages.

Internal geographical redistributions of population also have implications for the ratio of workers to dependents. All three of the papers that follow emphasize the importance of regional and rural-urban movements. Since these movements generally involve movement of workers to areas of greater economic development and therefore of labor demand, the process has generally been approved on economic grounds without pronounced attention to the social costs to the areas of origin. Since migrants are commonly young adults, the effect on the sending areas is the same as the death of youths just about the time that they would turn from dependents into producers. As Stolnitz has pointed out,⁹ it is at least arguable that economic policy should be directed toward the movement of other factors of production into depressed areas.

Actual participation in productive activities in undeveloped countries is likely to cover a wider age-range than in industrial countries. Although this may redress somewhat the unfavorable dependency ratios, reliance on the very young for labor when coupled with the large proportion of children in the population has a clearly dampening effect on attempts to improve the quality of the work force through education.

Arguing in terms of unfavorable dependency ratios may appear pointless in view of the common phenomenon of underemployment in undeveloped areas. The paradox tends to disappear as one notes that if available capital (including land) is used maximally at existing levels of economic organization and technique, additional producers may be no advantage but fewer dependents would be.

Here once more we are brought back to the importance of reduced fertility as a corollary to direct capital expansion in the strategy of economic growth.

By economic growth is usually meant something beyond agricultural expansion that would result in improved nutrition and clothing. The aspirations of and in behalf of undeveloped areas include rising levels of consumption of goods and services made possible by industrialization, whether by domestic production or by trade. Even if agricultural improvements appear primary, there are early limits to such improvements without industrial markets and industrial sources of capital. Thus economic development is likely to require the creation and expansion of a labor force in the technical sense (that is, some degree of specialization of economic activities from other social behavior and the applicability of some form of market test as to what constitutes labor), and the redistribution of producers into manufacturing, distributive, and a variety of service occupations.

⁹ In the discussion cited in n. 5.

Japan, as a primarily agricultural country at the beginning of its modernization, illustrates the processes of increasing agricultural production without expansion of agriculturalists, and the expansion of all manner of other occupations. The process requires considerable spatial movement as well as investments in technical training for occupational mobility.

As one turns attention to problems of the quality and distribution of workers, indirect or hidden capital expansion in the form of education and increased skills takes on importance. Brazil and India have low literacy rates, and low proportions of skilled workers, technicians, and professionals. The numerical adequacy or redundancy of labor supply should not blind the observer to the acute shortage of labor of appropriate skills for a modern economic establishment.

At this point we have overstepped any reasonable bounds of the demographic approach, and can justify doing so only by the important interrelations of the elements of any social system or scheme for its analysis. The papers that follow authenticate these interrelations more concretely and usefully than any further discussion here could do.

Demographic Factors Related to Economic Growth in Brazil*

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THIS PAPER is a summary treatment of some of the demographic factors related to economic growth in Brazil. The growth of population, distribution of the inhabitants and density, internal migration, immigration, the age structure, and educational levels all receive attention. To the degree that statistical materials make it possible, attention is concentrated on the recent trends in all these aspects of population analysis.¹

GROWTH OF POPULATION

The fairly reliable Census of 1950 enables us to know with some exactitude the present number of inhabitants and their distribution throughout the national territory. The Census of 1940 was also well done, thus offering a satisfactory basis for the study of recent trends. Earlier enumerations, however, leave a great deal to be desired: those of 1920 were probably padded to a considerable extent. Too much reliance cannot be placed upon those of 1900 and 1890, and the first census, that of 1872, was defective in a great many respects. Prior to that the figures at best are only considered guesses. Although Table VIII.1 is based on these often unreliable figures, it summarizes as well as possible the growth of population in Brazil since 1808.

* The author is grateful to the John Simon Guggenheim Memorial Foundation for the grant which made it possible for him to spend the year 1951/52 in demographic studies of the Latin-American countries. Particularly important was the trip of four months' duration in the course of which visits were made to the census and other statistical offices of Brazil and each of the other Latin-American countries. Much of the more recent information about Brazil used in the preparation of this report was available only because of this trip; and the knowledge that they were the most up-to-date available removed some of the doubts in connection with the use of part of the older materials.

¹ Those wishing information on some of the demographic subjects not included in this discussion are referred to T. Lynn Smith, *Brazil: People and Institutions* (Baton Rouge, 1946); and T. Lynn Smith, "The People and Their Characteristics," in T. Lynn Smith and Alexander Marchant, eds., *Brazil: Portrait of Half a Continent* (New York, 1951).

TABLE VIII.1
THE GROWTH OF POPULATION IN BRAZIL, 1808 TO 1950*

YEAR	POPULATION	YEAR	POPULATION
1808	2,419,406	1890	14,333,915
1823	3,960,966	1900	17,318,556
1830	5,340,000	1920	30,635,605
1854	7,677,800	1940	41,238,315
1872	9,930,478	1950	52,645,479

*Sources: F. J. Oliveira Vianna, "O Povo Brasileiro e sua Evolução," *Recenseamento do Brasil, 1920*, Vol. I (Rio de Janeiro, 1922), and *Sinopse Preliminar do Censo Demográfico* (Rio de Janeiro, 1951).

During the first half of the twentieth century the growth of population in Brazil was among the most rapid in the world, and at midcentury the rate seems to be increasing rather than falling off. There were in the Republic according to the census taken as of July 1, 1950, a total of 52,645,479 inhabitants. This is more than three times the number accounted for by the Census of 1900, when only 17,318,556 persons were enumerated throughout the entire extent of Brazilian territory. Thus the increase over the fifty-year period was 35,326,923 on an absolute basis, or 204 per cent on the relative. In the decade from 1940 to 1950, the ten years which elapsed between the two recent and well-done censuses, the gain in population was 11,407,164 persons, or 27.7 per cent. (See Table VIII.2.)

Over the half century 1900-50 Brazil's population increased at the rate of 2.2 per cent annually, while from 1940 to 1950 the growth was at the rate of 2.5 per cent per year. During comparable periods the rate of population growth in the United States averaged 1.4 annually over the half century as well as for the last decade of it. It was 2.0 between 1900 and 1910 and only 0.7 from 1930 to 1940. Recent censuses have made it possible to determine the rates of population increase between 1940 and 1950 in a few other areas as follows: Mexico, 2.5; Puerto Rico, 1.7; and Costa Rica, 2.3. Elsewhere in the world the only important areas with current population increases approximating those in Brazil, are: Tunisia (1936-46), 2.2; Dominican Republic (1920-35), 3.6; Panama (1930-40), 2.7; Argentina (1914-47), 2.2; Colombia (1918-38), 2.0; Venezuela (1936-41), 2.8; Formosa (1935-45), 2.4; Japan (1947-48), 3.3; Turkey (1945-50), 2.2; and Palestine (1922-31), 3.5.²

Currently the net increase in the Brazilian population is probably about 1,320,000 per year. This number is likely to increase each year of the present decade, for the death rate is being cut sharply, while the birth rate shows little tendency to fall off in proportion.

Because of regional differences in the birth and death rates, and especially because of great currents of internal migration, the rate at which

² *Demographic Yearbook*, Lake Success, N. Y.: United Nations, 1950.

TABLE VIII.₂

NUMBER OF INHABITANTS IN BRAZIL, 1900, 1920, 1940, AND 1950 BY REGION AND STATE TERRITORY, OR DISTRICT* AND PER CENT INCREASE

REGION AND STATE TERRITORY OR DISTRICT	TOTAL POPULATION				PER CENT INCREASE	
	1900	1920	1940	1950	1900- 1950	1940- 1950
North.....	695,112	1,439,052	1,462,420	1,883,325	171	28
Guaporé†.....	.....	.....	.....	37,438	.....	.....
Acre†.....	.....	92,379	79,768	116,124	26§	46
Amazonas.....	249,756	363,166	438,008	530,920	135‡	30‡
Rio Branco†.....	.....	.....	.....	17,623	.....	.....
Pará.....	445,356	983,507	944,644	1,142,846	165**	25**
Amapá†.....	.....	.....	.....	38,374	.....	.....
Northeast.....	4,275,287	7,434,392	9,973,642	12,652,624	196††	27††
Maranhão.....	499,308	874,337	1,235,169	1,600,396	221	30
Piauí.....	334,328	609,003	817,601	1,064,438	218	30
Ceará.....	849,127	1,319,228	2,091,032	2,735,702	222	31
Rio Grande do Norte.....	274,317	537,135	768,018	983,572	259	28
Paraíba.....	490,784	961,106	1,422,282	1,730,784	253	22
Pernambuco.....	1,178,150	2,154,835	2,688,240	3,430,630	191	28
Alagoas.....	649,273	978,748	951,300	1,106,454	70	16
Fernando de Noronha†.....	.....	.....	.....	648	.....	.....
East.....	7,896,074	12,874,275	15,625,953	19,162,745	143	23
Sergipe.....	356,264	477,064	542,326	650,132	83	20
Bahia.....	2,117,956	3,334,465	3,918,112	4,900,419	131	25
Espírito Santo.....	209,783	457,328	1,783,604	2,952,018	120††	17††
Minas Gerais.....	3,594,471	5,888,174	16,769,913	27,920,832	359††	21††
Rio de Janeiro.....	926,035	1,559,371	1,847,857	2,326,201	151	26
Distrito Federal.....	691,565	1,157,873	1,764,141	2,413,152	249	37
South.....	4,078,774	8,129,355	12,915,621	17,183,594	321	33
São Paulo.....	2,282,279	4,592,188	7,180,316	9,242,610	305	29
Paraná.....	327,136	685,711	1,236,276	2,149,509	557	74
Santa Catarina.....	320,289	668,743	1,178,340	1,578,159	393	34
Rio Grande do Sul.....	1,149,070	2,182,713	3,320,689	4,213,316	267	27
West Central.....	373,309	758,531	1,258,679	1,763,191	372	41
Mato Grosso.....	118,025	246,612	432,265	528,451	348	26
Goiás.....	255,284	511,919	826,414	1,234,740	383	49
Brazil.....	17,318,556	30,635,605	41,238,315	52,645,479	204	28

*Source: Taken or compiled from *Sinopse Preliminar do Censo Demográfico* (Rio de Janeiro, 1951), Table 1.

†Territory.

‡1940 population (66,914) of the territory in litigation between Espírito Santo and Minas Gerais is allocated 50 per cent to each of these states.

§1950 population (162,062) of territory in litigation between Espírito Santo and Minas Gerais is allocated 50 per cent to each of these states.

||Data are for period 1920 to 1950.

¶Data for 1950 include those for the territories of Guaporé and Rio Branco.

**Data for 1950 include those for the territory of Amapá.

††Regional total for 1950 includes the 648 inhabitants of the Island of Fernando de Noronha.

‡‡The population of the area of the Serra dos Aimorés, in litigation between the states of Minas Gerais and Espírito Santo, is allocated 50 per cent to each state.

the population is growing varies tremendously from one part of Brazil to another. These differences are shown in Table VIII.2.

The extent to which the forces making for urbanization are making their effects evident in Brazil is reflected in the fact that the Distrito Federal ranks third in rate of population increase in the period since 1940.

The additions to the national population between 1940 and 1950 were greatest in São Paulo, Minas Gerais, Bahia, Paraná, Rio Grande do Sul, and Pernambuco, in the order named. In this decade the four southern states accounted for more than 37 per cent of the national increase, and together with the Distrito Federal and the states of Rio de Janeiro and Espírito Santo, they were responsible for 49 per cent of the nation's gain in number of inhabitants.

The Outlook for the Immediate Future

There seems little reason for anticipating any radical change in the factors directly influencing the growth of population in Brazil in the immediate future. The rate of reproduction will probably fall to some extent as the urbanization process goes forward. Mortality, too, will continue to fall and probably by more than enough to offset the decrease in the birth rate. Immigration is not likely to be large enough to affect greatly the numbers in the population during the next decade. Therefore, the best guess as to the increase of population during the current decade is that it will take place at about the same rate as that recorded between 1940 and 1950 (2.5 per cent annually).

Based on a population of 52,645,000, as enumerated in the 1950 census, such a rate of increase will add about 1,316,000 persons to the population in the first year of the decade, and about 1,644,000 persons during the final year of the period. By September, 1960, Brazil will have a population of approximately 67,390,000.

DISTRIBUTION OF INHABITANTS

In 1950 density of population, measured in terms of persons per square kilometer, was 6.2, an increase from 4.9 in 1940, 3.6 in 1920, and only 2.0 in 1900. The equivalents in terms of persons per square mile are 16.1, 12.7, 9.3, and 5.2, respectively. For purposes of comparison it may also be well to have in mind that the number of inhabitants per square kilometer in a few other areas are as follows: the United States 20, Mexico 13 (according to the 1950 censuses), Argentina 6 (on the basis of her 1947 enumeration), Egypt 20, Japan 223, India 109, the Philippines 65, France 75, and the United Kingdom 206 (according to the latest [1949] estimates of the United Nations).

Table VIII.3 gives for each of the 20 states, 5 territories, and one federal district into which the Republic is divided, the area and the 1950 population, along with computations of the density of population and the percentage of the nation's inhabitants enumerated within the respective political subdivision. It also gives the comparable data and indexes for the

TABLE VIII.₃
 NUMBER OF INHABITANTS, AREA, DENSITY OF POPULATION, AND PERCENTAGE
 DISTRIBUTION OF POPULATION IN BRAZIL, BY REGIONS, AND STATES OR
 TERRITORIES, 1950*

REGION AND STATE OR TERRITORY	NUMBER OF INHABITANTS	AREA (SQUARE KILOMETERS)	PERSONS PER SQUARE KILOMETER	PER CENT OF TOTAL POPULATION
North.....	1,883,325	3,540,032	0.5	3.6
Guaporé†.....	37,438	254,163	0.2	0.1
Acre†.....	116,124	153,170	0.8	0.2
Amazonas.....	530,920	1,595,818	0.3	1.0
Rio Branco†.....	17,623	214,316	0.1	(1)
Pará.....	1,142,846	1,188,769	1.0	2.2
Amapá†.....	38,374	133,796	0.3	0.1
Northeast.....	12,652,624	969,704	13.1	24.0
Maranhão.....	1,600,396	332,239	4.8	3.0
Piauí.....	1,064,438	249,317	4.3	2.0
Ceará.....	2,735,702	153,245	17.9	5.2
Rio Grande do Norte.....	983,572	53,048	18.5	1.9
Paraíba.....	1,730,784	56,282	30.8	3.3
Pernambuco.....	3,430,630	97,016	35.4	6.5
Alagoas.....	1,106,454	28,531	38.8	2.1
Fernando de Noronha†.....	648	26	24.9	(1)‡
East.....	19,162,745	1,260,169	15.2	38.4
Segipe.....	650,132	21,057	20.9	1.2
Bahia.....	4,900,419	563,281	8.7	9.3
Minas Gerais†.....	7,920,823	587,040	13.5	15.1
Espírito Santo†.....	952,018	45,950	20.7	1.8
Rio de Janeiro.....	2,326,201	41,666	55.8	4.4
Distrito Federal.....	2,413,152	1,171	2,060.8	4.6
South.....	17,183,594	809,258	21.2	32.6
São Paulo.....	9,242,610	247,223	37.4	17.5
Paraná.....	2,149,509	200,731	10.7	4.1
Santa Catarina.....	1,578,159	93,849	16.8	3.0
Rio Grande do Sul.....	4,213,316	267,455	15.8	8.0
West Central.....	1,763,191	1,885,035	0.9	3.4
Mato Grosso.....	528,451	1,262,572	0.4	1.0
Goiás.....	1,234,740	622,463	2.0	2.4
Brazil.....	52,645,479	8,464,198	6.2	100.0

*Source: Compiled and computed from the data given in *Sinopse Preliminar do Censo Demográfico*, Rio de Janeiro: Instituto Brasileiro de Geografia e Estatística, 1951.

†Territory.

‡Area and population of the area of the Serra dos Aimorés, in litigation between the states of Minas Gerais and Espírito Santo, is allocated 50 per cent to each of those states.

§ Less than 0.1 per cent.

five regional divisions into which the political subdivisions are conventionally grouped. See also figures in Smith and Marchant, *Brazil: Portrait of Half a Continent*, p. 148.

The tremendous variations in density of population prevailing throughout Brazil are readily apparent and call for little comment. It is signifi-

cant, however, that only six states (Amazonas, Pará, Maranhão, Piauí, Mato Grosso, and Goiás) have man-land ratios which are below the national average.

CHARACTERISTICS OF THE POPULATION

Residence in rural or urban areas, age structure, industrial and occupational distributions, and educational status are the aspects of the general subject of the composition or make-up of the population judged to be most pertinent to the present subject.

Residence

At the present time Brazil is urbanizing rapidly, with the cities of São Paulo and Rio de Janeiro already ranking among the sixteen largest centers in existence. However, quantitatively and qualitatively Brazil's population still remains among the most rural in the world, a fact of primary importance in connection with the economic development of the country. On this score it is well to quote the generalizations of the late Dr. F. J. Oliveira Vianna, one of Brazil's foremost authorities on matters having to do with population:

From the first days of our history we have been an agricultural and pastoral people. . . . All our history is that of an agricultural people, is the history of a society of farmers and herdsmen. In the country our race was formed and in it were molded the intimate forces of our civilization. The dynamism of our history in the colonial period came from the countryside. The admirable stability of our society in the Imperial period was based in the country.³

According to the 1950 census there were in all of Brazil only 224 centers having as many as 10,000 inhabitants. In them lived 12,421,661, or 23.6 per cent, of the inhabitants. Even this, however, reveals that the current tendency towards urbanization is very strong, for in 1940 there were in Brazil only 140 towns and cities with populations of 10,000 or more; and at that time the population of such centers was only 7,332,769, or 17.8 per cent of Brazil's total.

The Brazilian census classified as urban all the seats of *municípios* (countylike subdivisions of the states) irrespective of size, and many of the little clusters of homes in the seats of districts as well. A very large share of these urban centers would fall in the rural category if criteria similar to those used by the United States Census were employed. Nevertheless, even on the basis of the Brazilian criteria, in 1950 only 19,197,686 (36.5 per cent) of the population qualified as urban, while 33,457,793 were rural. In 1940, however, only 31.2 per cent was urban. A special tabulation of the 1950 data reveals that 16,412,924 (31.2 per cent) of

³ "O Povo Brasileiro e sua Evolução," *Recenseamento do Brasil*, 1920, I (Rio de Janeiro, 1922), 281.

the Brazilian population lives in places of 2,000 or more inhabitants. It is well to remember, however, that Rio de Janeiro with 2,335,931 inhabitants in 1950 and São Paulo with 2,041,719 both are included among the 16 largest cities in the world. In addition there are in Brazil 12 other centers with populations of more than 100,000, namely, Recife (522,466), Salvador or Bahia (395,993), Porto Alegre (381,964), Belo Horizonte (346,207), Belém (230,181), Fortaleza (213,604), Santos (201,739), Niterói (174,535), Curitiba (141,349), Manaus (110,678), Maceió (102,301), and Campinas (101,746).

The growth and development of these highly urbanized segments of society, without a corresponding change in the backlands, has greatly accentuated rural-urban differences in Brazil. Recently the writer commented upon this as follows:

With less than 50 million people spread throughout its enormous territory, with relatively few important focal points of urban and industrial cultural influences, with a high proportion of the population engaged directly in agricultural and collecting activities, and with the systems of communication and transportation still in a rudimentary form, it should be evident that the degree of rurality in Brazil is very high. The inhabitant of the average little town or village in Brazil is conditioned to a far greater extent by cultural influences arising from the surrounding rural environment, and less by the cultural influences emanating from large urban centers, than is the resident of a center of equal size in the United States or Western Europe. It will still be many decades before good roads, automobiles, electricity, telephones, radios, newspapers, and the many other traits which have come to be considered as necessities in the average rural community in the United States are found to any considerable extent in the rural districts of Brazil. In the meantime the footpath, trail, or stream; the canoe, pack animal, riding horse, and oxcart; the homemade candle and lamp; and communication by word of mouth remain as the basic elements in the rural scheme of living in Brazil. There is no reason for doubting that, while Brazilian cities have moved ahead in the stream of modern progress, her rural districts have continued decade after decade with little or no visible change. Cultural lag has been tremendous. Whereas in the United States social changes since 1920 have tended to eliminate the differences between the ways of living in rural and urban districts, in Brazil the same forces have tended to accentuate even more the differences between the two.⁴

Age

As in other parts of the world in which the birth and death rate are both very high, Brazil's population is young. In 1940, for example, 42.5

⁴ Smith, "The People and Their Characteristics," p. 154.

per cent of Brazil's population was less than 15 years of age, whereas the corresponding figure for the United States was only 25.0. On the other hand, only 2.4 per cent of her population was 65 years or more in age, compared with 6.8 per cent in our own country. Of particular economic and social importance is the ratio of persons in the productive ages to those in the dependent ones. In 1940 there were in Brazil 82.4 dependents (persons under 15 and over 65 years of age) per 100 producers (persons between 15 and 65), whereas in the United States the corresponding ratio was only 46.8⁵. Between 1920 and 1940 there were no pronounced changes in the profile of the Brazilian age distribution.⁶

Occupation and Industry

The classification of the members of the labor force according to occupation and industry is perhaps the least satisfactory part of the modern census, and the Brazilian procedures are no exception to the rule. It is hardly possible to give a statistical analysis of the trends. Most significant of the data collected in 1940 are those which distribute the economically active population according to the major industries in which they were engaged. At that time the percentages of the 14,434,611 males of 10 years of age and over in the principal industries were as follows:

- Agriculture, Stockraising, and Forestry, 56.7
- Extractive Industries, 2.4
- Transforming Industries, 7.7
- Trade and Commerce, 4.8
- Real Estate, Credit, Banking, and Insurance, 0.3
- Transportation and Communication, 3.2
- Public Administration, Justice, and Education, 1.6
- National Defense and Public Security, 1.2
- The Liberal Professions, Religion, and Private Education, 0.5
- Services and Social Activities, 3.2
- Domestic Service and Similar Activities at Schools, 8.2
- Inactive, 10.2

Educational Status

The system of large estates and the highly stratified society which it developed preserved slavery, which was not abolished until 1888, and the overwhelmingly rural and feudal nature of the society long kept the educational status of the Brazilian population at a very low level. Only in the twentieth century, under the impact of a heavy immigration from abroad, the growth of towns and cities, and the development of a signifi-

⁵ The data for Brazil on which these computations were based, along with most of the 1940 materials used subsequently in this report, were taken from the *Recenseamento Geral do Brasil, 1940, Série Nacional, Vol. II, "Censo Demográfico: População e Habitação"* (Rio de Janeiro, 1950).

⁶ For the 1920 data see Smith, *Brazil*, p. 203; see *ibid.*, p. 155, for age-sex pyramids of Brazil and the United States.

cant group of middle-class farmers has the situation begun to change to any extent. However, it will probably be many decades before the average Brazilian receives anything like the amount of formal schooling needed to enable him to function effectively in the complex modern civilization of which he is rapidly becoming a part.

Mere figures on the percentages of the population able to read and write long ago lost their significance in a society such as that of the British Isles, Scandinavia, Germany, or the United States where the great bulk of the population possesses far more than those elementary skills. But throughout much of the world, including Brazil, the proportion of literacy or illiteracy is still the best available indicator of educational level.

On the basis of the data from the 1940 enumeration it has been possible to ascertain that 43.1 per cent of Brazil's population aged 10 years and over were classified as able to read and write. This represents a substantial improvement in recent years, for in 1920 only 31.9 per cent of the population aged 7 years and over were literate; and in 1920 and 1900, the proportions of those 15 years of age and over who knew how to read and write were only 35.1 and 34.7 per cent, respectively.

The proportion of literacy in 1940 was much higher among males than females, the percentages being 48.3 and 38.0, respectively. Although 54 per cent of the males in the 30-39 age group were reported as able to read and write, only 51.6 per cent of those between 20 and 29 were literate. That the corresponding figure for the age group 10-19 is only 42.3 per cent is hardly flattering to the educational activities between 1930 and 1940. Literacy fell from 50.8 per cent for those aged 40-49, to 49.1 per cent for those aged 50-59, and to 45.4 per cent for those aged 60-69. Among females, however, the manner in which literacy varied with age was somewhat different. The maximum proportion able to read and write was 42.2 per cent in the age group 10-19, after which the percentage fell consistently with increasing age to 30.0 for women 50-59 and 27.5 for those 60-69. This, no doubt, reflects a growing improvement in the status of women in education.

As might well be anticipated, the educational status of the Brazilian population varies sharply from one part of the country to another. As revealed by computations based on 1940 census data, the percentage able to read and write reached its maximum (81.8 per cent) in the Distrito Federal, which is practically the same as the City of Rio de Janeiro. Among the states, however, Rio Grande do Sul, where 61.2 per cent of the inhabitants aged ten years or more were classed as able to read and write, ranked first. São Paulo, strongly influenced by its great capital city, ranked second with 57.8 per cent literate. Then came Santa Catarina (56.2), Paraná (48.4), and Rio de Janeiro (47.9), in the order named. Only slightly lower was Espírito Santo (45.8 per cent), which resembles the more southerly parts of Brazil in that it is the home of a large class

of small farmers, and then the three largest and most sparsely populated states in Brazil, Pará (45.8), Mato Grosso (45.7), and Amazonas (41.6).

In 1940 illiteracy was most prevalent in northeastern Brazil, the state of Piauí, with only 21.9 per cent of its population of ten years of age and over able to read and write, being in the most unenviable position of all. It was closely rivaled, however, by Alagoas (22.0 per cent), Paraíba (23.7), and Maranhão (23.9). The corresponding figures for the other units in the Brazilian confederation, arranged in descending order of the percentages able to read and write, are as follows: Acre, 38.8; Minas Gerais, 38.0; Rio Grande do Norte, 30.4; Sergipe, 29.9; Ceará, 29.8; Pernambuco, 28.3; Bahia, 27.0; and Goiás, 26.4.

Another important indicator of the educational status of Brazil's population is the absolute and relative importance of the graduates of professional and technical schools and other institutions of higher learning. Data for examining this phase of the subject are available in the 1940 census, and they show a total of 106,498 persons holding degrees from all types of institutions of higher learning (*grau superior*). This is slightly less than 0.3 per cent of the population. In addition another 358,686 (0.9 per cent of the population) were classed as possessing diplomas from secondary schools (*grau médio*), which by a liberal interpretation might be classified as the equivalent of high schools in the United States.

In addition, it is significant to consider the professions or technological fields in which Brazil's 106,496 holders of university degrees, as of 1940, were engaged. These data come from the occupational classifications employed by the census and are as follows:

FIELD OF PROFESSIONAL EMPLOYMENT	NUMBER OF PERSONS WITH DEGREES		
	Total	Males	Females
Law.....	20,627	20,145	482
Medicine.....	18,585	18,042	543
Polytechnics.....	14,008	13,912	96
Dentistry.....	12,042	10,817	1,225
Pharmacy.....	10,083	8,242	1,841
The military.....	5,089	5,089	.....
Religion.....	4,684	4,598	86
Music and plastic arts.....	3,872	1,037	2,835
Agriculture.....	3,699	3,652	47
Pedagogy.....	1,970	1,665	305
Economic sciences.....	1,893	1,735	158
Industrial chemistry.....	1,683	1,558	125
Veterinary medicine.....	1,284	1,250	34
Transportation.....	743	694	49
Other.....	6,234	4,410	1,824
TOTAL.....	106,496	96,846	9,650

Finally, attention should be directed to the enrollments in institutions of higher learning in Brazil. According to the 1940 census the total number of persons then receiving instruction at the higher level was 40,294, of whom 38,842 were enrolled in educational institutions and the others studying at home. The over-all figure included 32,655 men and 7,639 women.

THE RATE OF REPRODUCTION

As yet the birth registration system in Brazil is imperfectly organized with only a fraction of the births actually being registered. Working with data on baptisms and other materials some years ago the author concluded that about 1940 the birth rate in Brazil must have been at least 40 per 1,000 population. More recently Professor Giorgio Mortara, through a study of the 1940 census data and such birth statistics as were available, concluded that the birth rate in Brazil is at least 42, being highest in the state of Santa Catarina (between 45.5 and 55.0) and lower in São Paulo (between 37.8 and 45.7) and in the Distrito Federal (between 26.5 and 40.0).⁷

In 1940 there were in Brazil approximately 68.5 children of less than 5 years of age for every 100 women between the ages of 15 and 45. Comparable ratios for some other selected countries follow: United States, 32.9 in 1940; Puerto Rico, 65.3 in 1940; El Salvador, 60.9 in 1930; and Mexico, 63.0 in 1940. The birth rates for the United States, Puerto Rico, El Salvador, and Mexico for the corresponding years are fairly reliable, being 17.9, 38.5, 45.0, and 44.3, respectively.⁸

MORTALITY

The registration of deaths in Brazil must be greatly improved before it will be possible to determine with any degree of accuracy the death rate, the expectation of life, the relative importance of the various causes of death, the infant-mortality rate, and many other essential items in human-resource accounting. That the mortality rate is very high is evident from the fragmentary data for the country as a whole and the fairly complete materials available for some of the principal cities. The age-sex pyramid, too, has a configuration which comes about only when a high mortality rate is operating in conjunction with a high birth rate. Just how high the death rate is, however, how it varies from one part of the country to another, and the manner in which it fluctuates from year to year are not likely to be known for some time to come; the extent to which the principal causes of death are being brought under control through the exten-

⁷ *Estimativas da Taxa de Natalidade para o Brasil, as Unidades da Federação, e as Principais Capitais*, Instituto Brasileiro de Geografia e Estatística, *Estatística Demográfica* No. 4, 1948, p. 11.

⁸ All of these data except the birth rate for El Salvador were derived from materials in the United Nations, *Demographic Yearbook, 1948*. The rate for El Salvador is from T. Lynn Smith, "Notes on Population and Rural Social Organization in El Salvador," *Rural Sociology*, X (1945), 367.

sive application of modern health and sanitary provision is also a current mystery.

In all probability the actual death rate in Brazil is between 17 and 21, and the expectation of life at birth must fall somewhere between 35 and 40. The data and line of reasoning on which these conclusions are based may be sketched briefly.

1. Between 1940 and 1950 the rate of population increase was 2.5 annually. Since immigration during this period was negligible, this figure is close to the rate of natural increase. If, as seems entirely possible, the 1950 enumeration was more complete than the 1940 count of population, the true rate of natural increase was somewhat under 2.5 per cent per year, but that factor alone could hardly reduce the figure to less than 2.3 per cent. As indicated above, Giorgio Mortara's careful study of the age distributions of the 1940 census and the other fertility data available led him to the conclusion that the birth rate in Brazil is about 42. With a birth rate of 42 and a rate of natural increase of 2.5 the death rate would be 17. If the true rate of natural increase were only 2.3, however, the death rate would be 19. Everything considered, it is likely that these figures err in the direction of being too small, if they err at all.

2. For the years 1939-41 Mortara has calculated the life tables for seven of the largest cities in Brazil, the ones for which the data are by far the most reliable. From these tables some of the more significant materials on expectation of life at birth are as follows:

EXPECTATION OF LIFE AT BIRTH

MUNICIPIO	MALES	FEMALES
São Paulo	46.7	51.8
Distrito Federal	39.8	45.2
Belo Horizonte	37.6	43.4
Porto Alegre	37.2	42.8
Belém	35.2	40.7
Salvador	32.5	37.4
Recife	28.1	32.5

There would be little point to attempting a detailed interpretation of these data, but it should be indicated that the figures for such cities as Recife, Salvador, and Belém probably are much nearer those for Brazil as a whole than are the ones for Rio de Janeiro and São Paulo, or even those for Belo Horizonte and Porto Alegre.

A death rate of 20 or even 17 is high and an expectation of life at birth of 35 or 40 is low. Together these indexes emphasize the fact that mortality in Brazil is almost double that which would prevail if modern sanitary and other preventive means were applied. The fact is that germ diseases, killers susceptible to control, still take a frightful toll of life in Brazilian cities, and especially throughout her vast rural territory.

Infant Mortality

Any figure on infant mortality in Brazil can be little more than a rough guess. Since this index is computed by taking the ratio of deaths of children of less than one year of age to live births, the deficiencies in birth registration make it impossible to compute this highly significant index of social well-being. When the 1950 age distributions of the population are completed, some rough equivalents may be devised, but at present some fragmentary materials for 1941 are the latest available. At that time the infant-mortality rates in the *municípios* embracing some of the principal cities were as follows: Manaus, 303; Recife, 292; São Luiz, 231; Porto Alegre, 230; Fortaleza, 209; Belém, 189; Rio de Janeiro, 183; Belo Horizonte, 156; São Paulo, 135; and Curitiba, 125.⁹ However, these rates are highly suspect. Most of them are probably too high.

Mortara, by methods the writer thinks are too conservative, estimated the number of live births for the years 1939 to 1941, inclusive, in six of the largest state capitals and in the Distrito Federal; and he also calculated the number of infant deaths occurring in the same cities during the corresponding years. Utilizing these corrected data in the computation of infant-mortality rates, one secures the following values for the period indicated: Distrito Federal (Rio de Janeiro), 171; São Paulo, 135; Recife, 267; Salvador, 201; Porto Alegre, 187; Belo Horizonte, 158; and Belém, 160.¹⁰

In the corrected tabulations of live births and infant deaths for the city of São Paulo and the Distrito Federal, Mortara also classified the data according to the color categories used in the Brazilian census. This makes it possible to examine how the infant-mortality rate in Brazil's two great metropolitan centers varies as one passes from the lighter to the darker shades in the population, which is approximately the same as moving from the higher to the lower social and economic strata. Thus in São Paulo the infant-mortality rate among the white population for the years 1939-41 was only 118 while among the Negroes and Pardos (mixed breeds) the rate was 257. Among the yellow (Japanese) population, however, it was only 61. At the same time among the white population of the city of Rio de Janeiro and the rural districts included in the Distrito Federal the infant-mortality rate among white children was only 129, while that among Negroes was 224. However, the mixed bloods, or Pardos, showed a rate of 272, far above that of the Negroes.¹¹

IMMIGRATION

Brazil was on the receiving end of much of the unprecedentedly large overseas migration of population which took place during the last quarter of the nineteenth century and the opening quarter of the twentieth.¹²

⁹ Cf. Smith, *Brazil*, p. 262.

¹⁰ Mortara, *Estimativas da Taxa de Natalidade*, pp. 39, 43.

¹¹ Computations from data given in *ibid.*

¹² The best data on international migrations for the period 1876 to 1924,

Since the end of World War I Brazil has been one of the principal lands to which those from other countries have gone in search of new homes.¹³ Her extensive tracts of unsettled territory and the philosophy and desires of many of her leaders make it likely that Brazil will continue, for some decades to come, to be one of the principal receivers of immigrants from other nations.

The data on immigration to Brazil, like those for other countries, leave a great deal to be desired; and this is particularly the case with respect to the migration of persons from neighboring countries. Even the data relating to the overseas migrations of persons from Europe and Asia are admittedly incomplete and otherwise defective. Undoubtedly they err, often considerably, on the side of understatement, and rarely, if at all, in the direction of overstatement. For all except the last two or three decades it is highly probable that the materials compiled by the single state of São Paulo, which also dealt directly with other countries for immigrants, are more complete and reliable than those assembled by the official agencies of the national government. Rough and unsatisfactory as they are, the data are sufficient to reveal the broad outlines of the subject.¹⁴

Between 1874, the earliest date at which it is possible to begin a fairly reliable series of data, and 1949, existing records indicate that a total of 4,546,560 immigrants were admitted to Brazil. The bulk of them settled in São Paulo, the state which put forth the most effort to attract immigrants.

By combining the data for the years 1884 to 1949, as compiled by the Conselho de Imigração e Colonização, and those assembled in the various editions of the *Anuário Estatístico do Brasil*, it is possible to determine, with a fair degree of precision, the countries of origin of Brazil's immigrants. (See Table VIII.4.) Undoubtedly there are some discrepancies in these figures, but they are hardly great enough to make any significant difference in the relative positions of the 37 principal countries from which Brazil received almost all of her recorded immigration. The

inclusive, are those assembled in Imre Ferenczi and Walter F. Willcox, *International Migrations* (New York, 1929), I, 261-273, Table 13. Compilations from these sources indicate that Brazil ranked fourth among the nations as a taker of overseas migrants, the figures for the leading countries for the 49-year period being as follows: United States, 26,895,368; Canada, 5,278,775; Argentina, 5,153,032; Brazil, 3,605,317; Australia, 2,588,189; and New Zealand, 1,044,137.

¹³ For the period 1926 to 1936, inclusive, Brazil's net gain through recorded immigration minus recorded emigration was 308,409. Countries for which the comparable figures were larger are as follows: Union of South Africa, 921,344; United States, 729,608; Germany, 638,736; Switzerland, 515,741; France, 446,831; Argentina, 423,238; and Mexico, 373,522 (T. Lynn Smith, *Population Analysis*, New York, 1948, p. 304, from data published in U. S. Bureau of Public Health, *Vital Statistics—Special Reports*, IX, 1940, 452-455).

¹⁴ For a discussion of Brazilian immigration statistics and an indication of the primary sources of the data, see Smith, *Brazil: People and Institutions*, chap. x.

great deficiencies, of course, are in the highly incomplete materials for several of Brazil's neighboring countries. Casual observations in the states of Santa Catarina, Paraná, and Mato Grosso are sufficient to convince one that there have been very sizable recent influxes of persons from these parts of Spanish America.

Italy is the country which has supplied Brazil with the largest immigrant contingent, although Portugal is a close second. Italians in Brazil have played conspicuous roles in the industrialization of São Paulo and in the agricultural development of that state and also of Rio Grande do Sul. However, the flow of Italian immigration has not been as steady and consistent as that of the Portuguese and some of the other nationalities. Migrant Italians swarmed into Brazil, particularly in the twenty-year period of 1884 to 1903 when 1,048,317 persons, or 73.4 per cent of all Italian immigrants, were admitted. The peak year was 1891, when the entry of 132,326 Italians was recorded; and the other years in which the volume was greatest are 1888 and 1897. After the outbreak of World War I in 1914, the immigration of Italians never again rose as high as 16,000 annually, and after 1925 it has never amounted to as much as 10,000 per year. The most recent figures show 3,284 Italians among the immigrants in 1947, 4,437 in 1948, and 6,352 in 1949.

Brazil has been one of the few American countries to admit Japanese as immigrants in any considerable numbers. A recorded immigration of almost 200,000 places this Asiatic group in fourth place among Brazilian immigrants.¹⁵ As compared with the other principal currents of immigration, that from Japan got under way at a late date. Almost all of it took place in the interval between the two world wars. The peak was reached in 1933 when almost 25,000 Japanese established themselves in Brazil, with 1934 and 1929 being the other years of greatest immigration. Since Pearl Harbor there has been practically no Japanese immigration to Brazil, the records showing only 1 in 1947, 1 in 1948, and 4 in 1949.

Germans rank fifth among Brazilian immigrants. They came early, but never in great numbers. The peak of 22,168 in 1924 stands far above the usual level. In the immediate past the immigration of Germans was as follows: 561 in 1947, 2,308 in 1948, and 2,123 in 1949. There are, of course, large numbers of German-speaking persons in Brazil, but the lion's share of them are persons whose progenitors have been in Brazil for several generations.

Russia, from which considerable numbers of Ukrainians and Poles made their way to Brazil, ranks sixth among the countries sending immigrants to Brazil. This movement got under way early and continued to some extent until 1934, the last year in which the number of immigrants from Russia was as many as 100. The two years 1890 and 1891, when 27,125 and 11,817 immigrants, respectively, from what then was Russian terri-

¹⁵ The history of Japanese immigration to Brazil is given in some detail in Smith, *Brazil*, pp. 278-283.

TABLE VIII.4
IMMIGRATION TO BRAZIL, 1884-1949, CLASSIFIED ACCORDING TO
COUNTRY OF ORIGIN*

COUNTRY OF ORIGIN	IMMIGRANTS	
	NUMBER	PERCENTAGE OF TOTAL
Italy.....	1,428,700	33.3
Portugal.....	1,251,375	29.2
Spain.....	586,880	13.7
Japan.....	188,830	4.4
Germany.....	178,250	4.2
Russia.....	110,988	2.6
Austria.....	86,764	2.0
Turkey.....	78,455	1.8
Poland.....	53,006	1.2
Romania.....	40,058	0.9
France.....	35,363	0.8
Lithuania.....	28,665	0.7
England.....	26,458	0.6
Argentina.....	24,419	0.6
United States.....	23,734	0.6
Yugoslavia.....	23,727	0.6
Syria.....	21,343	0.5
Switzerland.....	11,393	0.3
Uruguay.....	10,463	0.2
Hungary.....	10,313	0.2
The Netherlands.....	9,724	0.2
Libya.....	7,693	0.2
Belgium.....	6,947	0.2
Czechoslovakia.....	6,061	0.1
Sweden.....	5,081	0.1
Greece.....	4,792	0.1
Denmark.....	3,270	0.1
Esthonia.....	2,704	0.1
Chile.....	2,241	0.1
Latvia.....	2,209	0.1
China.....	1,689	†
Peru.....	1,325	†
Other countries.....	14,551	0.3
TOTAL.....	4,287,471	100.0

*Sources of data: *Revista de Imigração e Colonização*, Ano I, No. 4 (Oct., 1940) and *Anuário Estatístico do Brasil*, Vol. VII (1946), Vol. IX (1948), Vol. X (1949), and Vol. XI (1950).

†Less than one-tenth of 1 per cent.

tory, entered Brazil alone account for 35.1 per cent of the total. Most of the others arrived between 1908 and 1914. In recent years the records show the following numbers of immigrants from Russia: 18 in 1947, 1,342 in 1948, and 36 in 1949.

INTERNAL MIGRATION

Four types of internal migration seem to be particularly important in connection with the economic development of Brazil. These may be listed as follows: (1) a heavy flow of population from the rural areas to the urban centers; (2) a strong movement of population to São Paulo from Minas Gerais, Bahia, Pernambuco, Ceará, and others of the eastern and northeastern states; (3) the pushing forward to the agricultural frontier at many points and particularly in northern Paraná, central Goiás, western São Paulo, and southern Mato Grosso; and (4) the intensive milling around from plantation to plantation, ranch to ranch, and estate to estate on the part of a large share of the persons included in the rural labor force.

Rural-Urban Migration

Brazilian census officials have developed a highly satisfactory system of classifying the population into rural and urban categories, but they have not used rural-urban dichotomy to any extent in the actual tabulation of the census results. Therefore, it is even more difficult to infer what is taking place in the rural-urban exchange of population in Brazil than it is in the United States. An adequate analysis of the subject would require far more time and resources than are available for the preparation of this paper. Nevertheless, it is evident that the rural-urban movement of population has been very great. Not only is the flow of population from the rural districts the only satisfactory explanation of the remarkable growth of the cities of São Paulo and Rio de Janeiro, but elsewhere throughout the nation cities and towns have literally been bursting at their seams. All observers know that the influx of population from the rural districts is the principal cause, but the statistical data to demonstrate that fact are sadly lacking.

For the Distrito Federal the data are the most satisfactory. The 1940 census materials show the state of birth of those residing in the Distrito Federal at the time of the census. Of course, these do not reveal the years in which the migrations took place, nor do they distinguish between those who came from other towns and cities and those who actually migrated from the rural portions of the country. Taken in conjunction with certain other materials, however, they do throw some light on the subject of rural-urban migration, and they deserve inclusion in our discussion of the topic. Of the 1,533,698 native-born Brazilians living in the Distrito Federal in 1940, only 872,972 were reported as born in the Distrito. The adjoining state of Rio de Janeiro had contributed 286,609 persons to swell the inhabitants of the nation's capital, and 114,214 others were born in the nearby state of Minas Gerais. The larger contingents from elsewhere in the Republic were as follows: São Paulo, 36,332; Pernambuco, 29,150; Bahia, 27,703; Alagoas, 19,194; Espírito Santo, 17,824; Rio Grande do Sul, 17,224; Sergipe, 15,297; Ceará, 11,999; and Pará, 11,805. None of the other

states had sent as many as 10,000 to the capital.¹⁶ Unfortunately, there are no comparable tabulations for São Paulo or any of the other cities, but it is not unlikely that the movement into the national capital takes place by stages with many of the migrants going first to provincial towns and cities.

Also of significance in the study of rural-urban migration in Brazil are the rates at which the leading cities have been growing in comparison with the changes in the states of which they are the capitals. Although the movement of population from the rural to the urban districts is not the only factor involved in bringing about the observed differentials, it is beyond all doubt the principal one. In making the comparison it is well to keep in mind that in Brazil, almost invariably, the capital city is the largest center of population in the state in which it is located.

In the decade between the 1940 and 1950 censuses the population of the city of Rio de Janeiro increased from 1,519,010 to 2,335,931 while the number of inhabitants in the city of São Paulo jumped from 1,258,482 to 2,041,716. On the absolute basis the gain of 816,921 in Rio de Janeiro outstripped that of 783,234 in São Paulo, but on the relative basis the former grew by only 54 per cent and the latter by 62 per cent. In the meanwhile Brazil as a whole increased 28 per cent, approximately one-half the rate of its capital city, and the state of São Paulo by 29 per cent, or less than one-half that of its metropolis.

Elsewhere in Brazil there were no absolute increases in urban population on a scale to compare with those in Rio de Janeiro and São Paulo, although the number of inhabitants in Recife was 199,289 greater in 1950 than it had been in 1940 and the comparable figures for Belo Horizonte, Porto Alegre, and Salvador were 169,203, 122,448, and 105,550, respectively. In every state, with the exception of Paraná, the percentage increase of population in the capital exceeded that in the state as a whole; and in Curitiba, the capital of Paraná, even an increase of 42 per cent in population was insufficient to keep pace with developments in the more rural sections of Brazil's most rapidly growing state. Not a little of this change is to be attributed to the rapid expansion of the new coffee districts in northwestern Paraná. On the relative basis the growth of population in five state capitals exceeded that in São Paulo, with a gain of 178 per cent in Goiânia, the new capital of Goiás heading the list, followed by 96-per-cent increases in Belo Horizonte (Minas Gerais) and Florianópolis (Santa Catarina), a 90-per-cent gain in Natal (Rio Grande do Norte), and a growth of 66 per cent in Manaus (Amazonas). Recife (Pernambuco) increased by the same proportion, 62 per cent, as São Paulo. For convenience in making comparisons the percentage increases of population in the various states and their capitals during the period 1940 to 1950 may be given as follows:

¹⁶ *Recenseamento Geral do Brasil, 1940, Série Nacional, II, "Censo Demographico. População e Habitação,"* 8-11.

Amazonas (Manaus), 30 and 66	Bahia (Salvador), 25 and 36
Pará (Belém), 25 and 40	Minas Gerais (Belo Horizonte), 17 and 96
Maranhão (São Luiz), 30 and 39	Espírito Santo (Vitória), 21 and 22
Piauí (Teresina), 30 and 54	Rio de Janeiro (Niterói), 26 and 40
Ceará (Fortaleza), 31 and 52	São Paulo (São Paulo), 29 and 62
Rio Grande do Norte (Natal), 28 and 90	Paraná (Curitiba), 74 and 42
Paraíba (João Pessoa), 22 and 28	Santa Catarina (Florianópolis), 34 and 96
Pernambuco (Recife), 28 and 62	Rio Grande do Sul (Porto Alegre), 27 and 47
Alagoas (Maceió), 16 and 22	Mato Gross (Cuiabá), 26 and 30
Sergipe (Aracaju), 20 and 36	Goiás (Goiania), 49 and 178

The Migration from the East and Northeast to São Paulo

The long-continued search for cheap labor to help man São Paulo's coffee fazendas has been one of the most important forces in Brazilian history. First, of course, the Negro slaves were used for that purpose; and after the abolition of slavery, the coffee planters turned to Europe and Asia, recruiting extensively in Germany, Italy, Spain, and, eventually, Japan. In recent decades, however, they have been dependent largely upon workers from other parts of Brazil and particularly those from Minas Gerais, Bahia, and the northeastern part of Brazil. Today the movement of the laborers and their families from these sections to the south constitutes one of the most important currents of internal migration in Brazil. The stream begins thousands of miles to the north of São Paulo, in the states of Ceará, Rio Grande do Norte, and Paraíba; it is swelled by numerous recruits from Pernambuco, Alagoas, and Sergipe; but it takes on its true proportions only when the migrants from Bahia and Minas Gerais are included in the totals. Together all of this now amounts to a flow of some 200,000 persons annually into São Paulo from the states which lie to the north of it.

Naturally, the statistical data on the subject leave a great deal to be desired, but there are some fairly definite figures that may be used. These figures were assembled by the receiving and placement service maintained in the city of São Paulo to aid in getting the workers and employers together and to help care for the workers after they have entered São Paulo. This source, the Serviço de Imigração e Colonização, recorded the entrance into São Paulo of 745,173 from elsewhere in Brazil in the period 1908 to 1940, inclusive. Of these 332,459 migrated in the six-year period 1935-1940, with more than half of them (163,810) coming from Bahia. In the same six years the recorded migration amounted to 86,582 from Minas Gerais; 26,675 from Alagoas; 22,224 from Pernambuco; 8,650 from Rio de Janeiro; 5,610 from Sergipe; 5,274 from Ceará; and 3,592 from Espírito Santo.¹⁷

Comparable materials of a more recent date are not yet available, but preliminary data supplied the writer in September, 1951, indicated that recently the annual movement has been about 180,000. At present the

¹⁷ Cf. Smith, *Brazil*, pp. 325-331.

figure will be much higher because of another severe drought in the north-east. In July, 1951, alone more than 21,000 migrants passed through the *hospedaria* or hostel maintained for them in the city of São Paulo. The completion of the road from the south to Fortaleza has greatly facilitated the movement, since a single truck may now carry as many as 50 persons southward. A recent ban placed by the state of Ceará on the trucking of persons across the state line is entirely ineffective in halting the migration.

Pushing Forward the Agricultural Frontier

Periodically Brazilians thrust forward with feverish activity at this or that point on the frontier which separates the agricultural section of the country from the thinly populated districts in which a rudimentary grazing economy or a primitive collecting mode of existence has undisputed sway. In the 1930's the onslaught was upon the forests of western São Paulo, with rich coffee fazendas and thriving populous cities springing up in areas that only a few years earlier had been absolutely desolate.¹⁸ Today the struggle goes on at many places, with the agricultural occupation of the westernmost parts of São Paulo, the rapid development of a new coffee district in northern Paraná, the extension of coffee and cotton culture into the southern part of Mato Grosso, and the influx of population into central Goiás ranking as the most important. Of these the writer's recent personal observations have been confined to the settlement of central Goiás, and for that reason the more detailed comments to follow are limited to migration into that area.

Accurate statistics concerning the migration are, of course, entirely lacking. One can only estimate by counting the number of those who arrive by train, checking a little on the trucks arriving and the number of families carried by each, observing the numerous oxcarts bringing in new families from afar, taking into account the stream of persons making their way on foot into the newly opened area, and noting recent changes in population. The trains are jammed, especially with second-class passengers who flood over into the first-class cars. There is only one train per day, but it seldom carries less than three hundred persons. The day I traveled from Araguari to Anapolis the train was packed with second-class passengers migrating to Goiás. As a result it was impossible to find a lodging in Anapolis, the terminus of the railroad and the point of dispersal for the migrants. People were sleeping everywhere and the benches at the station were always full. On the roads and trails there was a constant stream of pedestrians, oxcarts, and not a few trucks. The night I spent at the Colonia Agricola de Goiás one truck arrived from the Sorocaba district of São Paulo carrying six families and their possessions. They had been on the way six days, stopping to rest only two of the nights and driving the other four. Not unusual is the sight of a family making its

¹⁸ *Ibid.*, pp. 578-581.

way to central Goiás with all of its worldly possessions, including the spinning wheel, packed into a small cart that is drawn by eight to twelve sheep. Oxcarts pulled by six to sixteen oxen are much more common. As yet the pioneer who comes from a section in which the four-wheeled wagon is used and makes the journey in a Brazilian counterpart of the "prairie schooner" is not to be seen. Only migration from Paraná, Santa Catarina, and Rio Grande do Sul is likely to introduce that vehicle, all-important for transportation on the farm. Well-informed persons think that all of this adds up to the migration of 75,000 persons per year, but it might be safer to place the estimate at about 50,000. Taken in conjunction with the sparsity of population existing in the area until the very recent past, even that is a remarkably large number of new arrivals.

A small part of the migrants are of the small *fazendeiro* class, men who themselves participate actively in the direction of the operations. Most of them, however, are from the lower classes—persons who intend either to work a few years as peons, or to obtain the use of land for three years in return for cleaning it. Later on they hope to get a small tract of their own.

Most of the migrants come in from the South. From Minas Gerais there is a heavy movement by train from the areas around Uberaba and Uberlândia in the Triângulo. This stream of migrants goes first to Araguari and then north. At Goiandira, in southern Goiás, they lose their identity in a much larger group coming from the more easterly portions of Minas Gerais. Goiandira is a junction point at which the Rede Mineira de Viação connects with the Estrada de Ferro de Goiás and turns over to the trains of the latter the thousands of migrants it has assembled from along its lines in the central and southeastern parts of Minas Gerais. The day I made the journey the train from Araguari was flooded at Goiandira with migrants from in and near Formiga. The roads leading north from the Triângulo of the same state also carry a large number of the migrants.

From northern Minas Gerais, Bahia, and the northeastern states, a considerable number of migrants, mostly of the lower class, make their way overland and enter Goiás at Formosa. Even the old residents of the state stand aghast at the fortitude and endurance of the migrant from the Northeast. For example, it is said to be the rule that the Bahia woman, participating in the migration, who gives birth to a child, stops only one day to rest before continuing the long, wearisome trek on foot.

A few migrants also come from the North, ascending the Tocantins River. Even some of the rubber workers transported to the Amazon from the Northeast shortly afterward moved to Goiás via this route.

Above all, this migration is one of families, involving persons of both sexes and all ages. Three generations are included in a very large proportion of the groups entering central Goiás. A new *fazenda* will be

opened by a father and several married sons. The laborers they bring along, or send for, also are composed of family groups. Others from the lower class who hear the good news and move to Goiás also include everyone from babes in arms to grandfathers. For this reason Anápolis and other points of entrance have little of the rollicking spirit generally present in frontier or "Wild West" towns.

White and Indian blood greatly predominates among the migrants from Minas Gerais, although Negroid characteristics are by no means lacking. The migrants from Bahia are of a much darker hue. So far there has been very little tendency for the migrants to return to their old homes. This is especially true of those from Minas Gerais. Those from Bahia are much more nomadic in habits, and are especially prone to leave for wherever a new strike of gold or diamonds is reported. On the whole, the tendency to remain seems much greater than it has been on the part of those moving to São Paulo.

The Milling Around of the Rural Population

The bulk of the Brazilian rural population is a migratory lot. Lacking definitive property rights in the land, equipped with a lore that enables him to make use of the gifts nature provides for the taking, enslaved to no elaborate standard of living, dependent largely upon his primitive "fire agriculture" system of making a crop, and unwilling to endure the feudal subjugation frequently involved in fixed residence, it seems almost inevitable that the typical *caboclo*, as the rural Brazilian of low social status is called, should be highly nomadic in his habits.¹⁹

¹⁹ Considerable documentation for these statements and the descriptions of the migratory patterns of the lower class rural Brazilians are found in *ibid.*, pp. 37-42, 106-110, 304-305, and 459-460.

Social and Demographic Aspects of Economic Development in India

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THE THINGS THAT make a nation powerful can be classified under three heads: (1) its natural resources, (2) its manpower resources, (3) its efficiency. The first of these, the natural material at a nation's command, is pretty well fixed by the national domain. The second, the sheer quantity of man power, while not fixed, is generally slow to change and is in any case largely beyond the capacity or desire of a national government to manipulate. The third, efficiency, is by far the most diverse in its components and the most subject to deliberate change. Hence any nation tends to view efficiency as the most flexible thing it has to work with. In the case of the underdeveloped countries the lack of efficiency is so glaring as compared to that of industrial nations that the proper course seems clear. The task is to increase efficiency until it equals or surpasses that of the advanced peoples.

But efficiency has meaning only in terms of the assumptions one makes and the goals one pursues. It is differently defined in different cultures and epochs. In the present world there are two powerful goals which are not only widespread but also engender a similar, or common, view of efficiency. These goals are the desire for national strength and the desire for high living standards. Although at a certain point there is obviously a conflict between the two goals, they nevertheless both require an abundance of wealth for their satisfaction. Hence efficiency comes to be defined as the long-run maximization of production (goods and services) in relation to natural resources and man power. Since efficiency as thus defined becomes a generalized means to very powerful ends, it is itself, by the shorthand logic of public thought, given the status of a basic goal.

What is novel today is that the underdeveloped areas of the world have made of economic development a high ideal. They have associated it . . . with political independence, a sense of sovereignty, thought of it as a means to redress long-felt inferiority and chagrin.

And, aside from pride and power, they are filled with a feeling that it is practical and possible to overcome the persistent hunger, the preventable disease, death and misery which, among them, is commonplace.¹

Though efficiency has thus come to be defined in terms of two major goals, this does not prevent its being hedged around by other goals and other means. Men live by a host of values, of which national strength and high living standards are only two. They constantly limit efficiency in one direction by a contrary kind of efficiency in another direction.

For example, one of the greatest limitations on the conscious attainment of high living standards arises from the failure to view the quantity of man power in instrumental terms. If it were so viewed, governments could pursue a long-run policy of adjusting population to resources so as to get the highest per-capita return. The nearest approach to such a policy is perhaps found in migration laws, but even there other considerations than efficiency in our sense prevail. The Nazis came closest to an over-all deliberate population policy, but their failures and absurdities illustrate the peculiar difficulties of such an attempt. Furthermore, since the number of people required for national strength may well be different from the number required for individual prosperity, persons who cherish both goals apparently suppress from consciousness the idea of population as a manageable phenomenon. In any case, for practical policy, the quantum of raw man power in a nation is usually taken, along with natural resources, as given. It has of course to be included in calculations of efficiency, but only as one of the uncontrollable features of the external world. This exclusion of population as a manageable variable constitutes one of the most important limitations on the concept and practice of societal efficiency. If it were overcome, new vistas of social change would open up which only the utopians of contemporary science can dimly perceive.

One reason why population is generally excluded from the domain of means is its involvement with sex and reproduction. This illustrates the truism that the more emotionally rooted a social institution, the less can it be avowedly treated as an instrumentality. Our best understanding and measurement of efficiency surely occurs in the technological, or engineering, sphere. The next best occurs in the economic sphere. But as one moves from the economic to the other aspects of social organization, one finds oneself dealing with phenomena that are regarded either as ends in themselves or as so closely connected with such a diversity of ends that no common denominator exists. To talk about these matters from the standpoint of their contribution to economic efficiency is to run the risk of seeming either cynical or satirical. It is most often done by

¹ Editorial in *Economic Development and Cultural Change*, No. 2 (June, 1952), p. 83.

Western observers looking at other civilizations or by Westernized natives in non-Western lands. These can look upon the traditional beliefs and practices on the other side of the fence with some detachment, even when they cannot do so with respect to Western society. But it is generally not the detached observer who implements a change; it is the people and government themselves, and hence it is *their* preconceptions that limit the sphere of rational action.

However, not all the difficulties with the efficiency concept can be blamed on the actual participants in policy formation. The outside observer is himself beset with problems of a scientific character. Efficiency, for example, has a temporal aspect. It is not only the effectiveness of one act considered in itself but also the consequences of that act for still other and future actions. For example, the productivity of workers in a given occupation is one thing; its multiplier effect on the total economy is another. As a change ripples out through the social system, its total effect becomes increasingly hard to measure.

If increased productivity is our dependent variable, then by way of explaining its occurrence we tend to look first for those factors closest to it in the conceptual framework of technology and economics. We think, for example, of industrialization. This term, if not used simply to mean the construction and utilization of large factories or as a vague synonym for modernization in general, can be specifically defined as the use of mechanical contrivances and inanimate energy (fossil fuels and water power) to replace or augment human power in the extraction, processing, and distribution of natural resources or products derived therefrom. Thus defined, industrialization obviously is a central factor in increased productivity, and there is little wonder that the nonindustrial nations ardently desire it.

But reference to mechanical power is only the first step in explaining how greater productivity is achieved. The next step calls for an answer to two additional questions: First, what factors make possible the application of mechanical power to production? Second, can productivity be increased in other ways, and are some of these ways essential for industrialization itself? Both questions clearly bring us into the realm of social organization where, as already mentioned, our difficulties are enormously increased. Intuitively we realize that all aspects of society bear some relation to a marked increase in productivity. Yet our intellectual tools, our statistical sources, and our methodological equipment are not adequate to work out the specific relationships. Often we feel that such and such is "a factor," but do not know the extent to which, and the clearly defined and measured conditions under which, it is a factor.²

² An illustration is found in the United Nations report, *Measures for the Economic Development of Under-Developed Countries* (New York, 1951). This report in chap. iii, "Pre-Conditions of Economic Development," attempts to specify the social conditions making for economic progress. These are nicely summarized, but no evidence concerning their relative importance and no ways of measuring them are given.

Occasionally the term "capital" is used to designate everything that must be brought to raw man power and natural resources to obtain greater production. Such loose usage obscures rather than clarifies the sociological requirements. Since the various alternative uses of capital are not all equal in their effects on productivity, a scale of emphasis among them must somehow emerge in a successful developmental program. In so far as the program is governmentally controlled, this scale will rest on judgments (explicit or implicit) as to the effect of various social conditions on economic advance—judgments which are perforce rough and often erroneous. Everyone knows that where labor is cheap, labor-intensive industries have a competitive advantage. Few know the expense or the precise result of rationalizing governmental organization, systematizing the legal system, eliminating superstition, or giving recognition to noteworthy achievement. Few know the answer to such a question as this: Does an amount spent on public health contribute more to the national product than the same amount spent on primary instruction? Further, it stands to reason that certain changes may be large in their consequences and yet require little financial outlay. If so, it is the business of government and social science to ferret them out.

The behavior of contemporary nations suggests that the alternative uses of capital do not affect productivity precisely in proportion to their competitive economic return. Increasingly capital is being used to accomplish collective as contrasted to private ends. As a consequence the growth of product resulting from capitalization does not reflect itself entirely in higher levels of personal consumption (i.e., through expenditures controlled by the individual's own taste) but rather through national expenditures for armaments, conservation, foreign aid, social security, bureaucratic organization, and what not. Inevitably other goals than an enhanced output get into the collective program. Even in those parts of the program specifically designed to increase production there is a tendency to overlook the more intangible and in many cases less costly methods of stimulation in favor of more purely economic measures.

It must therefore be admitted that in the matter of societal efficiency we have a concept but little else. In practice it is hedged about by the pre-conceptions and institutions of a going society; in social science it is handicapped by the unreality of ignoring these practical limitations and by the lack of an adequate set of measuring devices. The concept says: Given a certain quantum of natural resources and human population, there exist numerous ways of bringing the two together for the production of goods and services, some of these ways being more effective than others. But it does not tell us how to measure effectiveness with respect to the non-economic parts of the social system. We can make use of such makeshift indices as exist, but in the last analysis we are thrown back on speculation and general theory.

INDIA'S COMPARATIVE POSITION AND RATE OF CHANGE

Among underdeveloped areas, India is favorable for a case study of social factors in economic change. Not only are the data reasonably good in comparison with those drawn from other retarded areas, but also India has a non-Western culture which allows us to observe some variables apart from the Western culture complex. In the retrospective analysis of change in the West, the essential factors cannot always be disentangled from the nonessential. A country such as India, like Japan, affords an opportunity to test, as a clinical case, hypotheses derived from the study of Western history.

In India, furthermore, the government itself is wrestling with development problems and an educated stratum is thinking and writing about them. There is thus an extensive literature written by natives of the country, as well as numerous works produced by the British and other Europeans with years of experience there. Despite the complexity and diversity of India, therefore, we are reasonably well informed about it, though by no means adequately so. Within the limitations of the problem of social efficiency in general, we have in India a favorable ground for study.

How Underdeveloped Is India?

As a starting point, let us try to assess the current position of India among the world's countries. Here we run straight into the deficiency of the comparative materials because, apart from the figures to be given in a moment, very few data exist for *all* the nations and colonies of the world which can serve as a means of placing any one country. Estimates of average per-capita income, for instance, do not exist for all countries. In the absence of complete coverage, India is in danger of being compared with a selected sample.

As a result of research at Columbia, we can compare India with the rest of the world in connection with a few indices of socioeconomic development.³ It turns out, as Table IX.1 shows, that with respect to industrialization, as measured by the percentage of occupied males engaged in nonagricultural pursuits, India stands about at the midpoint of the array. Fifty-one per cent of the rest of the world's population live in countries more industrialized than India and 49 per cent in countries less industrialized. However, this result is partly a function of the fact that the industrial countries are more populous than the nonindustrial. When each country is treated as a unit regardless of population, we find that, by our measure, only 43 per cent of the countries and colonies of the world are more industrialized than India. Thus, although India's figure of 68.9

³ The collaboration of Dr. Hilda Hertz of the Bureau of Applied Social Research in the preparation of international comparative statistics is acknowledged with pleasure, also the mathematical work of Dr. Carl Hammer in connection with this program.

per cent of the male population dependent on agriculture in 1951 places her definitely in the nonindustrial category,⁴ she is somewhat more industrialized (in per-capita terms) than the average nonindustrial country.⁵ Of course, the total picture is not revealed by averages. Most of the countries of the world cluster toward the nonindustrial end of the scale. The

TABLE IX.1
INDIA'S RELATIVE POSITION IN THE WORLD: SELECTED INDICES

	PER CENT OF WORLD'S POPULATION IN COUNTRIES†		PER CENT OF WORLD'S COUNTRIES	
	AHEAD OF INDIA	BEHIND INDIA	AHEAD OF INDIA	BEHIND INDIA
Industrialism* ††.....	51	49	43	57
Agric. density† †.....	57	43	69	31
Urbanization‡ ††.....	59	41	51	49
Literacy* ††.....	92	8	68	32
Per-capita income§ ††.....	57	43	73**	27**

*Measured in terms of the percentage of occupied males who are engaged in agriculture. Dates primarily for 1947 or near there.

†Number of gainfully occupied males in agriculture per square mile of agricultural land (i.e., land under crops or fallow). Dates same as (*).

‡Percentage of population living in places of 20,000 or more. All data relate to the year 1950.

§Percentage of population age ten and over able to read. Dates same as (*).

¶Not based on world as a whole, but on seventy countries which include about 90 per cent of the world's population.

‡Excluding the population of India-Pakistan for industrialization, agricultural density, and literacy; and excluding the population of India for urbanization and per capita income.

**These figures are meaningless, because colonies and other dependent territories are excluded.

††Data gathered or estimated by the Division of Population Research, Columbia University.

‡‡Data from Statistical Office of the United Nations, *National and Per Capita Incomes, Seventy Countries—1949* (New York, 1950).

⁴ Census of India, *Final Population Totals of 1951 Census*, Paper No. 1, 1952, pp. 10-13.

⁵ For our purpose an industrial country is defined as one with less than half of its occupied males in agriculture. For the rationale of this measure, together with a discussion of world industrialization in terms of it, see K. Davis, "Population and the Further Spread of Industrial Society" in *Proceedings of the American Philosophical Society*, XCV (Feb. 13, 1951), 18-19. The percentage of occupied males in non-agricultural pursuits is a good measure of industrialization because, within a national economy, it shows to what extent men are being freed from the sheer production of food, feed, and fiber, which, from an economic standpoint, are merely the starting point and not the end product of production. Furthermore, agriculture lends itself to mechanization and rationalization so that with high capitalization few men are needed to conduct it. Hence a high proportion of people in agriculture means a poor country. In addition, agriculture requires much more space than any non-agricultural pursuit (hunting and fishing being included with agriculture), with the consequence that it leads to isolation and consequently has a negative effect on the cultivation of the arts and sciences necessary for high productivity.

It should be noted that our data on occupational structure for the countries and colonies of the world do not all relate to the same date, but mostly to dates in the 1940's. The data are therefore not exactly comparable, but the error should be small. The 1941 figure for India includes the Pakistan area, but the occupational structure of the two countries at the time of partition in 1947 was quite similar.

countries at the other end of the scale are few in number and widely scattered. The United Kingdom, for example, has only about 8 per cent of its male labor force in agriculture, the United States about 17 per cent.

India turns out to be more advanced occupationally than she is on any other index in Table IX.1. This is surprising since one thinks of India as a country in which excess population is uselessly backed up on the land. Possibly her people have been forced out of cultivation because of lack of land, not because of genuine opportunities in nonagricultural pursuits; or, to state the same thing in another but more dubious way, the bulk of the nonagricultural occupations may be even lower in productivity than agriculture itself, for whatever reason. Such explanations assume a high degree of accuracy in the data, which is not the case. In any case the situation is curious because India is considerably worse off in agricultural density than in degree of nonindustrialism. In 1941 she had 152 male agriculturalists per square mile of agricultural land as compared to a world average of 128. This may be due to her having more fertile land on the average than most undercapitalized countries; it is hardly due to an unusually good use of such soil resources as she has.

It is harder to explain away India's disadvantage in terms of urbanization. We find that the country had, in 1951, 6.8 per cent of its population in cities of 100,000 or more, as compared to 13.1 per cent of the world's population in such cities. India manifests less than half the urbanization found in Brazil (13.9 per cent in 100,000-plus cities in 1950) and only one-fourth the urbanization of Chile (26.0 per cent in 1950). Most of the world's countries and colonies have less than 10 per cent of their population in cities of 20,000 or more. India, with approximately 9.9 per cent of her population in such cities in 1951, stands close to the border of this class.

It is in literacy, however, that India's most pronounced disadvantage occurs. With approximately 85 per cent of her people aged ten and over unable to read and write in 1941, her showing is far worse than the world average of 52 per cent. Over 90 per cent of the earth's people outside of India are apparently better off than India in this respect. How to explain India's poor showing in literacy is difficult. Perhaps part of it is in the rather strict definition of literacy used in the Indian census, but this cannot explain more than a fraction of the disadvantage. Perhaps a long colonial period during which a foreign language was added to the welter of tongues already present in the country was partly responsible. In any case, it seems clear that one of the spheres in which India is currently most underdeveloped is education. In so far as public education is essential for economic development, it would seem that India is justified in investing a large portion of her budget in schools.

These findings as regards India's current position are sharpened by treating the comparative data in another way. The figures for all coun-

tries can be used to compute a regression line for each pair of our three variables—industrialism, urbanism, and literacy. The formula for each regression line can then be used, in the case of any one country, to predict the value of one variable if the value of another variable is given. Since the regression lines are based on the entire universe of countries and colonies, the predicted value in the case of a particular country is the value this country *should* have if it were typical, in view of its position with respect to another variable.

One regression formula yields the percentage of occupied males engaged in agriculture when the proportion of the population in cities of 100,000-plus is given. Applying the formula to India we come out with a predicted value of 69.3 per cent for the males in 1951. This is rather close to the figure of 68.9 per cent of the male population dependent on agriculture in 1951, according to the census. When only the countries with census data on the two variables are used in computing the regression equation (i.e., excluding those countries for which estimates had been made on one or both of the variables), the application to India yields a predicted value of 67.9 per cent for males in agriculture in 1951, which again is close to what we have from the census. One may conclude, therefore, that India's degree of industrialization is normal in relation to its degree of urbanization, and vice versa.

But when we apply to India the equation for literacy as a function of urbanism for the whole universe of countries, we find that India's predicted literacy is very much higher than her actual literacy. In view of her degree of urbanization, India should have in 1951, according to the formula, 42.8 per cent of her people aged ten and over able to read. Actually, the percentage was nowhere near this high. In 1931 it was only 9.2 and in 1941 only 15.1 (estimated).⁶ By 1951 it is quite unlikely to have been as high as 25 per cent. We now see what we saw before, but in more precise terms—that in relation both to her urbanization and her industrialization, India is lagging far behind in education. By this type of analysis the observer begins to understand not only how underdeveloped India is as a whole, but in what respects she is most and least underdeveloped.

THE RATE OF CHANGE IN INDIA

One would like to know not only India's current position among the world's countries but also her comparative rate of change. Such knowledge, however, is unobtainable in exact terms, simply because the historical data are missing for too many countries, including certain crucial types of data for India herself. Under such circumstances one must be content with only a rough and partial analysis.

Beyond doubt the rate of change has been accelerating in India.

⁶ The 1941 estimate of literacy in India was made by the author on the basis of census returns for certain provinces and states. For the method see *Population of India and Pakistan* (Princeton, 1951), p. 151.

Nobody knows whether the acceleration is less or greater than in either the rest of the world or the countries roughly sharing India's position. What appears to be happening is that the social system and the economy are in the early stages of rapid growth, suggesting that there is more acceleration to come.

With respect to urbanization, the present percentage in cities of 100,000-plus (6.8 per cent) is about the same as the percentage in the United States in 1855.⁷ But the curious thing is that urbanization is proceeding more slowly in India than it was doing in the United States at that time. This can be seen from Table IX.2, which compares the two countries. The United States had in 1820 a smaller proportion of its population in 100,000-plus cities than did India in 1891, but the growth in the proportion during the following decade was four times more rapid in the United States than it was in India. The American proportion in large cities was also less in 1830 than it was in India in 1891, but the American gain during the following decade was 17 times as fast. As a result, whereas in 1891 India was about 55 years behind the United States in urbanization, by 1931 she was over 90 years behind. Even though her rate of city growth increased markedly after 1931, it never reached the rates the United States had at the same level of urbanization. In consequence, by 1951 the Indian Union could be described as lagging almost 100 years behind the United States in the process of urbanization.

It may be objected that the United States was unusual in its development. But we have to be careful to make sure that it is not India that is

TABLE IX.2

PROPORTION IN CITIES 100,000-PLUS, AND PERCENTAGE CHANGE IN PRIOR DECADE, INDIA, UNITED STATES, AND BULGARIA

INDIA*			U. S. A.†			BULGARIA‡		
DATE	PER CENT IN CITIES	PER CENT CHANGE	DATE	PER CENT IN CITIES	PER CENT CHANGE	DATE	PER CENT IN CITIES	PER CENT CHANGE*
1891	2.21	...	1820	1.28				
1901	2.33	5.4	1830	1.57	22.7	1910	2.37	
1911	2.34	.4	1840	3.03	93.0	1920	3.18	34.2
1921	2.69	15.0	1850	5.66‡	86.8	1926	3.89	37.2
1931	2.86	6.3	1860	8.39	48.2	1934	4.72	26.7
1941	4.25	48.6	1870	10.71	27.7	1947	8.00	53.5
1951	6.76§	59.1	1880	12.38	15.6			

*Computed from Indian censuses and from Economic Division, Indian Govt. Planning Commission, "Growth of Cities: Facts and Problems" (mimeographed, Nov. 19, 1951).

†Data from Philip M. Hauser and Hope T. Eldridge, "Projection of Urban Growth and Migration to Cities in the United States" in Milbank Memorial Fund, *Postwar Problems of Migration* (New York, 1947), pp. 162, 170.

‡Computed from censuses. The figure for 1947 is in part an estimate.

§Adjusted to a ten-year period in those cases where the elapsed time is not a decade.

§Indian Union only.

§Official data adjusted for the omission of Brooklyn.

⁷ As of 1950 the percentage in the United States is 29.4.

unusual. Presumably industrialization can be speedier the more recent its occurrence. The pace of change was exceedingly slow in England; it was much faster in Germany, Japan, and Australia. We might therefore expect India to move faster than nations did which became industrialized earlier. A preliminary analysis of our comparative data suggests that India is moving ahead from given levels of urbanization much slower than did the more recently industrialized countries when they had similar levels, but that it is going ahead about as fast as did either the older industrialized countries (such as France) or the currently underdeveloped countries (such as Bulgaria). The acceleration in India in the last two decades is what we would expect in terms of past history, and it is worth noting that the fastest gains in urbanization seem generally to occur after the 3- or 4-per-cent level has been reached, rather than before—although, to be sure, there is such variation from country to country that a consistent height-slope relationship is difficult to establish.

The comparative rate of change in literacy in India is harder to establish, because reliable information is unobtainable on Western countries for a period when their literacy was as low as that of India today. However, most countries eclipse India's rate of gain in literacy, though starting from higher levels. This might suggest that India is atypically disadvantaged in her present educational position; but this interpretation needs to be tempered by the apparent fact that the greatest slope in the literacy growth curve does not come in the early stages but later on—when, say, about 20 per cent of the population age ten and over can read. The curve has a clear logistic shape, as one might expect in the case of this type of measure.

Urbanization and literacy give us our two best indices of social as distinct from purely economic change in India. They both suggest that India is in the early stages where development is slow but that she is beginning to enter a more rapid stage, albeit lagging behind in comparison with what was historically true of the more recently industrialized nations.

The next question concerns the relation of these indices to economic trends. Here we emerge with a strange result: Despite our finding that India seems more economically advanced at the present time than she is socially, it appears that in the last few decades she has been making faster social than economic progress. If this is true, it must have been that in the nineteenth century the reverse was the case, that she made faster economic than social progress. No particular credence should be given to this interpretation, but it does raise some interesting speculation about colonial regimes.

By way of illustrating lack of change in our economic indices, let us take the percentage of the male labor force in agriculture. This figure has changed not at all, as the following figures show:

	PER CENT ⁸
1911	71.1
1921	71.9
1931	71.2
1941	72.8
1951	68.9

No significance should be attached to the apparent rise in 1941, because the figure is estimated on a tenuous basis. It has to be borne in mind that the percentages through 1941 are for males and that there has apparently been some withdrawal of women from the labor force in agriculture.⁹ But the figures do substantiate the continuance of a very high degree of agriculturalism. Indeed, the proportion in agriculture is so high that it is almost impossible to find good historical data for the industrialized nations at a period when their situation was comparable. Already in 1841 England and Wales had only 31.4 per cent of their economically active males in agriculture. In the United States, in 1820, the proportion of *all* gainfully occupied persons in agriculture was 71.8 per cent. The decline was somewhat gradual for the next two decades, but began to accelerate after that. With 68.9 per cent of males dependent on agriculture in 1951, India is about where the United States was in 1840 (when the percentage was 68.6). In other words, India is about 110 years behind the United States in this regard, with some evidence that the kind of moderate initial decline the United States experienced in the 1830's and 1840's is beginning to set in.

Since there has been some growth in both manufacturing and urbanization in India during the last few decades, the question may be raised as to how the agricultural labor force could have remained so large. One possible explanation is that rural handicraft has declined, removing rural folk from the village to the city but not lessening the proportion directly engaged in cultivation.

The general index of Indian industrial production rose in 1941 to a point 18 per cent higher than that of 1937, but it did not keep all of this gain during the next eight years, when it averaged only 15 per cent higher than the 1937 figure.¹⁰ The index of over-all agricultural production fell in 1946-48 to 95 per cent of the 1934-38 average.¹¹ Since

⁸ The first three figures are computed from G. G. Ghate, *Changes in the Occupational Distribution of the Population* (New Delhi, 1940), pp. 13, 20. The 1941 figure is estimated on the basis of five states and areas giving occupational data for the 1941 census. It is unreliable and should be taken as nothing more than an indication that the percentage had not dropped by 1941. The 1951 figure, previously cited, refers to the male population dependent on agriculture, but should not be much different from the figure for occupied males only.

⁹ The lesser proportion of women may also be due to stricter definition of employment for females in the more recent censuses.

¹⁰ United Nations, *Statistical Yearbook 1949-50*, p. 132.

¹¹ *Ibid.*, p. 99.

the population grew by more than 13 per cent between 1941 and 1951, it can be seen that per-capita economic gains were, on the whole, nil. Strong inflationary trends have pushed up the cost of living sharply, the index of wholesale prices rising by 1951 to four and a half times the prewar figure.¹² As a result "the level of real income per head at present is probably no higher—and may well be lower—than, say, in 1939-40."¹³ In fact the estimate of Rs. 255 as the average per-capita income for 1948/49 suggests, when adjusted for price increases, no higher real income than that arrived at in estimates for periods decades earlier.¹⁴

Thus the trend of economic change seems, in the per-capita sense at least, remarkably stagnant, more stagnant than the trend of social change. Both the economic and the social indices indicate that any modernization of India during the twentieth century has been as slow as it was at an earlier time in the older industrial countries, and somewhat slower than it was in the newer industrial countries. In some respects, notably in literacy and urbanization, India has reached the level where considerable acceleration of change has often occurred in other countries, but there is no guarantee that such acceleration will take place. Comparisons with industrial countries are difficult because of the lack of adequate data for those countries when they were as underdeveloped as India is today. But a country can today modernize itself more rapidly than was possible in the eighteenth and nineteenth centuries—as Japan and the Soviet Union illustrate. This fact suggests that India is laboring under some kind of depressor. At best she is repeating the very slow history of the older industrial nations in their earliest stages of development. At worst she is not achieving even this. Granted that theoretically a newly developing country does not have to repeat all the old steps (it can simply borrow the most advanced elements without having to evolve them), the hypothesis of a depressor becomes plausible.

What is this depressor? Whatever it is, it is surely not a single factor but a multiplicity of factors in equilibrium. It is doubtless not peculiar to India but is shared by many underdeveloped areas. Our task is to assess some of the demographic and social elements that may be involved—understanding, of course, that they are analytically separable from the economic factors but not empirically independent of them. Let us start with the demographic side, which brings us back to the mention of man power in the first section of this paper.

THE ROLE OF POPULATION

Population has a double aspect. It is, on the one hand, as the term "man power" suggests, a resource available to the economy for work. As

¹² Planning Commission, *First Five Year Plan*, pp. 12, 27.

¹³ *Ibid.*, p. 12.

¹⁴ *Ibid.*, p. 13. For a recent discussion of various estimates of per-capita income in India, see J. B. Jathar and S. G. Beri, *Indian Economics* (London, 1949), Vol. II, chap. iv.

such, it must be properly combined with other resources. On the other hand, the population is in a sense the goal of production, as the term "people" implies. It is in behalf of the people's standard of living, in behalf of their protection and integrity, that production is undertaken. It follows that a realistic analysis of human numbers as regards social change must deal with both aspects of population—as a productive resource and as a consuming public—in relation to each other.

If it were not for the consuming side, a growth of man power would have a much wider usefulness than it actually does. It would then be in the category of agricultural land or water power, the value of which, when combined with other resources, would continue almost regardless of how much they were expanded. But because of its consuming side, the growth and use of man power has narrower limits than has any other resource. As a resource, its utilization, like the utilization of any other resource, has its cost—the cost entailed in combining it productively with other resources; but it has on top of this an added cost. This added cost is the cost of its consumption; and, taken one way or another, this consumption is the total product of the society.

Viewed in this light, man power is the most expensive element in production. It follows that any means of decreasing *its* use in relation to product is a gain. This is why the ultimate measure of economic progress is per-capita production.

Due to its consumption side, man power can never be a purely "idle" resource or, in Zimmerman's phrase, simply "neutral stuff." It is not like oil in the ground which costs nothing to leave there but may potentially be used at some future time. Man power is costly not to use as well as to use. This being true, the effect of underemployment of human resources is greater in long-run terms than the effect of underemployment of natural resources; at best it can be compared to the underemployment of capital equipment, which requires cost of maintenance while lying idle. But the cost of idle man power must be measured in terms not only of production not accomplished and of the cost of maintenance, but also in terms of the cost of consumption above maintenance, which is an unavoidable cost.

Of course, the unemployment of human resources is simply an extreme case of their "underemployment." It is impossible to have all human resources unemployed, just as it is impossible to have all physical resources unemployed; but partial unemployment, or general underemployment, is not only possible but is, in certain cases at least, a partial function of the number of people in relation to given physical resources.

Underemployment in this sense is not only a failure to use the physical power of human beings to some optimum degree, but also the failure to use their faculties, inherited or acquired. Acquired faculties are largely a function of the level of living. Thus, in another way, we run into the fact that the consuming aspect of man power is intimately related to its

productive aspect. The numerical magnitude of the labor force can get in the way of its efficiency in the sense of acquisition of skills and faculties. Full employment in a physical sense may therefore be, in certain instances, compatible with underemployment or unemployment of skills; and may, furthermore, be an obstacle to improvement.

With these considerations in mind, let us return to some of the known facts in India's case.

GROWTH OF POPULATION IN INDIA

During the half-century from 1871/72 (when the first of the decennial censuses was taken) to 1921, India never had two decades of substantial population growth in a row. Since 1921 (more properly since 1918), however, she has had three decades in a row of the most rapid population growth she has ever experienced. The population and decade increase of the India-Pakistan area was as follows:

	POPULATION (MILLIONS)	PER-CENT INCREASE IN DECADE
1921.....	305.7	
1931.....	338.2	10.6
1941.....	389.0	15.0
1951.....	437.5	11.2 ¹⁵
1921-51.....		43.1

In the territory now covered by the Indian Union itself, a rough calculation indicates that the population added between 1921 and 1951 was 110 million, an increase of 44 per cent in three decades.

Recent Population Growth in Relation to Production

A rise of 44 per cent in total population during three decades suggests at once that the national product has risen. Elsewhere in this volume,¹⁶ Daniel Thorner disputes this inference. He claims that from 1893 to 1946 "the total annual production of all food crops [in gross tons] has remained at a constant level" and that since World War I "the tendency in total food output is *downward*"; that the growth of modern industry has not been sufficient to offset the decline in agricultural output; that foreign trade has remained virtually stable in volume; and that no credence can be given to the national-income estimates for different periods in so far as they show a rise in per-capita income. Thorner's argument, however, is confused. In the first place, he voices strong opposition to the present writer's statement that the national product in India has increased, but most of his points concern merely the per-capita real income,

¹⁵ The 1951 figure includes an estimate of 4.4 million for Jammu and Kashmir and of 561,000 for unenumerated tribal areas of Assam. There is some reason to believe that the figure for Pakistan, 75.7 million, may be an undercount. The growth in the Indian Union from 1941 to 1951 was 13.4 per cent.

¹⁶ See pp. 103-128.

which the writer (in the statement quoted by Thorner) has said showed no perceptible increase. In the second place, he places entirely too much emphasis on food production in order to draw an adverse conclusion about total national product.

Thorner's thesis of a declining national product is belied by his own data. Most of his empirical material comes from an unpublished work by Mr. Blyn, so that the methods are not open to scrutiny. But it is significant that the figures given show that, though the tonnage of food crops declined after 1920, the tonnage of nonfood crops increased. If we compute the percentage of food crops to total crops, by decades, based on figures given in his Table IV.3 (consisting apparently of the weight of each crop multiplied by the average price of that crop), we get the following:

	PER CENT OF FOOD CROPS TO ALL CROPS
1893-96	81.8
1896-1906	80.4
1906-16	77.8
1916-26	76.3
1926-36	71.1
1936-45	67.5

If the output of the total economy had been declining, one would have expected the proportion in food crops to *increase* rather than decline, because the population would have been pushed back on sheer sustenance agriculture. Someone must pay for the commercial crops; presumably certain sectors of the economy *must* have been expanding in order to pay the bill. Furthermore, the decline in food production (assuming the Blyn-Thorner figures to be correct) has been in part compensated for by steadily increasing food imports and declining food exports. Finally, the rationing system may have caused an improvement in food distribution. In short, a decline in food production, if true, does not necessarily mean a decline in the national economy. If it did, England would have gone completely bankrupt between 1875 and 1894.

As for the industrial and trade sectors, Thorner's treatment ignores much material. But actually he does not try to deny that industry has expanded. The United Nations *Statistical Yearbook* would have demonstrated the falsity of any such conclusion.¹⁷ He tries to show instead that the industrial and trade expansion has not been sufficient to raise the average level of living, which is not the point at issue with the present writer. As for Thorner's contention that national-income estimates are too inadequate to prove a rise in per-capita real income, he may be right, but he

¹⁷ Such indicators as installed electric capacity, railway freight and passenger traffic, commercial vehicles in use, registered tons of shipping, and communications all show impressive increases.

does not discuss the question of whether they indicate a rise in *national* income. Actually, according to such data as Thorner gives, they do indicate such a rise.

Thorner's thesis is also put in question by the gains in urbanization and literacy. Writing apparently without the 1951 census results before him, he says that "no substantial urbanization has taken place," but we know that the rate of urbanization in India has been accelerating, especially since 1920, and that India is now more urbanized than most underdeveloped countries.

We thus return to our thesis that the 44-per-cent growth in population during 1921-51 implies a rise in national product rather than a reduction in average consumption levels. The natural increase was brought about almost entirely by a decline in the death rate, which does not usually happen when the level of living is being reduced. Further, the level of living was already so low in 1921 that a marked reduction in it hardly seems possible. A rise in national product undoubtedly occurred, but this did not necessarily mean a rise in per-capita income. Probably the level of living did not fall, but we can accept Thorner's findings to the extent of believing that the level of living rose only slightly or not at all. If this is true, one is privileged to draw the conclusion that the 44-per-cent population increase after 1921 ate up what must have been the gain in national product.

One is also privileged to draw the conclusion that the population growth itself could not have been totally responsible for the increase in national product. The evidence of mounting unemployment and underemployment, the obvious piling up of people on the land, the scarcity of productive instruments in general in relation to people, all point to a redundancy of population. Therefore, it seems safe to say that a lesser population increase would have left the people with a greater average wealth and a greater average real income than they actually have.

It is difficult to say how much of a difference a lesser population growth, or even fixity of numbers, would have made. The writer's view, admittedly hard to substantiate, is that the growth of population after 1921 contributed little to the gain in national product, and that consequently this gain could have been mostly available for distribution to the people if the total population had remained fixed instead of growing. This view is based on three grounds: (1) The population was already beyond the economic optimum in 1921. (2) The utilization of man power today is indicative of a huge surplus of population. (3) Economic development is measured, not in terms of how much labor it uses, but how little. The first ground will not be discussed here, and the other two are implicit throughout. We can therefore move on to the point that, if population growth has caused the increase of national product to be dissipated in such manner that no noteworthy rise in per-capita real income has taken place, then we have one of the depressors we are looking for in explaining what

seemed to us to be a retarded position and a slow rate of economic development in India.

Such a conclusion should not, however, be a stopgap to further inquiry. There are two orders of additional questions to be pursued: First, why did national production grow no faster than it did and thus not get farther ahead of population increase? Second, why did the population grow as fast as it did?

Concerning the first question, we have seen that national production increased about as rapidly as population did. But why did it not grow more rapidly? Perhaps population growth itself had something to do with retarding the rate of increase of total national production, but its influence must have been slight. It is one thing to ask whether the population growth cut down, or virtually precluded, increases in *per-capita* product; it is quite another to ask whether it reduced the total national product below what it would otherwise have been. If population growth had only slight influence in this respect, then what other factor kept the national product from rising faster? The first thing to ascertain, of course, is whether total production in the Indian economy was increasing about as fast as it could. This is a question of economics, and I shall not try to answer it except to say that the experience of other countries such as Japan and the Soviet Union seemingly demonstrate the possibility of a much higher rate of growth.¹⁸ If true, then what kept Indian production from doing so?

One of the stock explanations is the past status of India as a political vassal and economic satellite of Britain. Without going into the arguments for this interpretation, which have been well stated elsewhere,¹⁹ the author will accept the proposition as substantially true. This does not mean, however, that had India remained politically independent from the decline of the Mughal Empire to the present time, her total production would necessarily have moved ahead faster. Political sovereignty guarantees neither economic independence nor economic advance. The cases of China, Thailand, Tibet, Liberia, and Haiti prove that. All that can be meant by the depressing influence of British rule is that, under *ideal* conditions either of British suzerainty or of political independence, the national product *could* have risen faster than it did. The important thing is not

¹⁸ On potential rates of economic development in relation to population growth, see Joseph J. Spengler, "Economic Factors in the Development of Densely Populated Areas" in *Proceedings of the American Philosophical Society*, XCV (Feb. 13, 1951), 20-53.

¹⁹ See Romesh Dutt, *The Economic History of India under Early British Rule* (7th ed.; London, 1950) and *The Economic History of India in the Victorian Age* (London, 1950); Daniel H. Buchanan, *The Development of Capitalistic Enterprise in India* (New York, 1934), chap. xix; Tulsi Ram Sharma, *Location of Industries in India* (Bombay, 1946); H. Venkatasubbiah, *The Structural Basis of Indian Economy* (London, 1940); Vera Anstey, *The Economic Development of India* (London, 1929).

so much the fact of foreign rule as the way it was exercised. British rule represented a considerably lesser contribution to Indian output than it might have represented had every effort been intelligently and effectively bent in that direction. The growth in total output might actually have been less if India had remained independent; but also it is true that the *per-capita* rise in production might have been greater. Britain's rule over India resulted in a balance of factors different, in all probability, from that which would have occurred if full independence had been retained. Among the differences of balance are perhaps a greater perpetuation of agriculturalism versus manufacturing and a greater emphasis on public health as against other welfare measures. The latter point, however, brings us to our second question, the causes of India's population growth, especially during the last thirty-four years.

Causes of Population Growth

If the demographic cause has been a decline in the death rate without a corresponding change in fertility, the social and economic causes must be sought in changes affecting mortality. It cannot be assumed that per-capita food available to Indians has risen particularly since 1918. In view of Thorner's findings and the very harsh food condition now prevailing, it would be questionable to say that better nourishment has played a role in the decline of mortality during the last thirty-four years, except in the sense of reducing famines. Nor can internal peace be mentioned as a significant factor, because that had existed for many years prior to 1918. Probably the most important single cause of mortality decline during the period under consideration has been the control of disease through modern medical science and public health measures. Except for one great epidemic, the influenza holocaust of 1918 which took an estimated 18 or 19 million lives,²⁰ the population growth from 1901 would have been steady and substantial. The success after 1918 in reducing mortality below even the 1901-17 average was therefore due to the avoidance of major epidemics and better medical work on nonepidemic ills. Improvement of the water supply in many areas has played a role. The use of medicine, inoculation, the vector control in reducing mortality from plague, cholera, malaria, typhoid, kala-azar, and other diseases capable of attacking millions has been very effective. At the present time still more strenuous sanitary and medical measures, plus the use of new drugs dating only from yesterday, are driving down the death rate still further.

If the major explanation of the drop in mortality is the application of modern medical science, then we can note a certain imbalance. Nothing like an equal amount of science is being expended on the control of fertility. The result is an acceleration of population growth, as previously noted.

²⁰ Davis, *Population of India and Pakistan*, Appendix B.

FUTURE EFFECTS OF POPULATION GROWTH

The imbalance between mortality and fertility responsible for the rapid population growth since 1918 is necessarily a temporary phenomenon. It cannot continue for very long, because it would result in a doubling of the population every sixty-three years. Doubtless Indian economic development could exceed for a while such a rate of growth (about 1.1 per cent per year), but it could not do so indefinitely. The reason is clear: a growing superabundance of population in relation to other resources produces an eventual disequilibrium which hampers economic development itself.

But, it may be said, the question is not solely one of theoretical possibility in the indefinite future, but also of actual probability in the specifiable future. In other words, how long could the rate of economic development exceed the rate of population growth, under what conditions, and by how much? This is a question impossible to answer with precision, but there are several considerations that lead the writer to believe that coming conditions in India will not permit the continuance of the 1918-52 rate of population growth for as many as four decades.

In the first place, there is already evidence that the current population density and rate of growth are hindering economic advance. The Indian government, with the best of intentions for economic modernization, finds itself sacrificing capital formation for consumption, because consumption means to the majority of its people barely enough to eat and wear.

The Quest for Food

For example, the ever more desperate food situation is causing economic effort to be increasingly turned in the direction of simply getting more food. For the period 1936-39 the average area under cereals was 167 million acres, whereas in 1949/50 it was 183.8 million—an increase of 10 per cent. But the production of cereals for the corresponding periods was 44.2 million and 46.1 million tons respectively—an increase of only 4.3 per cent.²¹ The comparison indicates either that India was having to put marginal lands into cereal production (with consequently greater cost and danger of soil depletion) or that productivity on old lands was declining. Between the two periods the population grew something like 15 per cent. As a result, India, an agricultural country, has had to import grain to the extent of 2.75 million tons per annum during the four years 1947-50.²² The Five Year Plan says that an annual importation of about 3 million tons must be contemplated, with perhaps a larger figure in exceptional years.²³

Thus India is losing foreign exchange which, if there were not so many mouths to feed, could be better spent on the importation of machines, machine tools, fertilizer, chemicals, technical books, technicians, and other

²¹ Planning Commission, *First Five Year Plan*, p. 12.

²² *Ibid.*, p. 69.

²³ *Ibid.*, p. 72.

necessities for a long-range program of industrial development. But the tragic part is that, despite the importation of food grains at great cost, the "*per capita* availability of cereals for domestic consumption is lower than before the war."²⁴

In consequence the steady growth of population is forcing the government to take still other measures, not so much to increase the level of food consumption, but simply to maintain it at least at a low standard. Among these measures is the restriction of the use of land for commercial as opposed to food crops. Already, mainly because of the diversion of land to food growing, the production of such commercial crops as sugar, cotton, jute, and tobacco has declined;²⁵ and the Five Year Plan envisages a future price policy designed to reverse the general trend to commercial crops.²⁶ Yet commercial crops afford exports for foreign exchange and raw materials for Indian industry.

In such ways the overriding necessity of getting enough food is hampering the very economic development which, if allowed to take place, might eventually make the food situation better. As the Planning Commission says, "India's food problem is not a temporary disequilibrium between supply and demand; it is a manifestation of the continually growing pressure of population on food supply."²⁷

Man Power Utilization

Another respect in which population superabundance impinges on economic development in India is in the waste of man power. Unemployment is not a necessary consequence of population pressure, but when people are backed up on the land for lack of opportunities outside agriculture, when both capital and resources are extremely scarce in ratio to man power, full or partial unemployment is extraordinarily hard to avoid. The biggest loss probably comes from inefficient employment, which is never solely a function of population redundancy but may in part be traced to it. For instance, the effort to avoid straight unemployment may lead in directions antithetical to efficient utilization. The "make-work" attitude which emphasizes the "necessity of a job" rather than the "job to be done" is prominent in Indian thinking; and Indian officials, though generally aware of its speciousness, are not always able to combat it. A frequent remark concerning specific measures of technological progress,

²⁴ *Ibid.*, p. 12.

²⁵ United Nations, *Economic Survey of Asia and the Far East*, 1949, pp. 7, 10-12.

²⁶ *First Five Year Plan*, pp. 78-81.

²⁷ *Ibid.*, p. 67. One often hears in India that the influx of Hindu refugees from Pakistan has forced the government to provide for more consumption than would otherwise have been the case. This is true, but India's net gain in population from this source cannot have been much more than 2 million people. Against the total population of India, this is a very small percentage and cannot compare with the immigration into Palestine or some other countries at certain periods. Curiously, one hears the same complaint in Pakistan.

particularly in agriculture, is "What about the people who would be thrown out of work?" It is easier to make technological gains in something like medicine or public health which is not thought of in a job-supplying context than it is in agriculture, manufacturing, or government.

Indian man power is so plentiful in relation to capital and resources that it is cheap; and, being very cheap, it is wasted. The writer watched a runway being built at an airport near Siliguri in Northern Bengal. A line of ragged men and women were carrying crushed stone in containers on their heads. At first it was thought a dump truck, or even wheelbarrows, would be cheaper, but then it was reflected that rice is cheaper than gasoline or steel in India and that the wages of these "coolies" is little more than the rice it takes to keep them alive. Such use of labor instead of capital equipment is obviously inefficient. The standard of living cannot rise much so long as human beings are cheaper to use than gasoline engines or wheelbarrows. The industrial countries of the West have often made progress precisely because they were short of human labor and thus had to use ingenuity, machinery, animal power, fossil fuels, and rational organization to get things done. In a country like India, where people are legion, where men fight for jobs, labor tends to be squandered in inefficient, useless, and often purely symbolic work.

It is not that population pressure makes full and efficient employment impossible. It is rather that, with the density and rapid growth of numbers, the task of meeting the human tide with adequate measures of economic organization, under conditions of few resources and little capital, becomes harder and harder until, from a practical point of view, it simply is not done.

FUTURE DEMOGRAPHIC POSSIBILITIES

Granted that the demographic factor is an economic depressant in India, the next question is what future developments with respect to this factor are possible. We shall consider four conceivable alternatives separately, under the assumption that each alone is to be *the* possibility (as is often done in misplaced controversy), and then consider them in relation to one another (as is necessary from the standpoint of reality).

Emigration as a Possible End to Population Growth

It can be taken as axiomatic that massive emigration on a scale sufficient to remove the natural increase of India's population is merely a theoretical possibility, not a practical one. Such emigration would have to count on the removal of about four million people per year. The greatest movement of international migration in human history—the peak period of immigration to the United States during the fifteen-year period from 1900 to 1914—brought an average of only 892,000 per year to our shores. Of these something like 30 per cent returned to their homes, so that the net immigration was hardly more than 624,000. In the meantime the whole world has become increasingly peopled. The stretches of virgin

territory once open to the migrant have virtually all disappeared.²⁸ Population is still growing rapidly not only in India but nearly everywhere. There is little likelihood, therefore, that the rest of the world will accept enough migrants from India to stop the Indian population growth even for four or five decades, much less forever.

Increased Mortality as a Possibility

A rise in mortality is more probable. The decline in the death rate since 1918, representing as it does an unbalanced situation, may prove temporary. Circumstances could arise in which warfare, famine, and disease would carry away scores of millions in India, depleting the population to the point where decades would be required to build up to the present number again. Such an increased mortality would hardly be permanent. It would more likely be a temporary phenomenon which, reducing the population sharply, would provide a long breathing period in which economic modernization could take place free from the demographic impediment.

The Normal Industrial and Demographic Transition as a Possibility

A third possibility is that the Indian population will actually continue to grow until the industrial revolution has run its course and has caused fertility to be controlled. If this should occur, the experience of other nations shows that India would probably hold at least a billion people (nearly half of the world's present population) at the end of the transition. Right now it is hard to see either how the transition could be made or how the resulting population could have a standard of living high enough to support an industrial civilization. The possibility that industrialization will prove the sole means of eventually stopping the population growth therefore seems remote.

An Early Reduction of Rural Fertility as a Prospect

A fourth possibility is that a way will be found to reduce the birth rate in India prior to the industrial revolution. Since this would be the most humane and least costly means of stopping population growth, it is the one that everyone is considering at the present time, especially since it would presumably aid the process of industrialization and hence facilitate a rise in the standard of living. It deserves to be discussed in detail.

The remarkable news from India today is the widespread recognition in that country of a need for limiting births. The government has officially recognized the need and has shown a readiness to do something about it. There is thus a bare possibility that a new and revolutionary step in human history may be achieved: the discovery of a way to bring birth limitation to massive peasant populations without awaiting the slow and demographically expansive process of urbanization and industrialization.

In talking with government officials the writer was indeed surprised

²⁸ See W. D. Forsyth, *The Myth of Open Spaces* (Melbourne, 1942).

by their detailed knowledge of the population problem and their enthusiasm for some line of action. They do not believe that overpopulation is solely responsible for India's poverty, or that the only remedy is through population control. Nor do they agree unanimously on either the importance of population or the proper means of dealing with it. A few still argue that economic measures alone are necessary or that more people mean more military strength. But the majority agree that family planning and postponement of marriage should be brought to the masses now, by quick and direct means. They believe that this step, if successful, would play a role in making possible precisely the rapid economic modernization that is sometimes proposed as an *alternative* to birth limitation. Many think that it would also play a role in saving India from Communism, because the hopelessness of an agricultural country clogged by too many people, with no prospect in view other than continued poverty with continued growth of numbers, is a fertile field for Communist activity.

Evidence of the government's intentions is contained in the Planning Commission's report, which says:

Under present conditions, an increase in manpower "resources" does not strengthen the economy but, in fact, weakens it. . . . Unless measures are initiated at this stage to bring down the birth-rate and thereby to reduce the rate of population growth, a continuously increasing amount of effort on the part of the community will be used only in maintaining existing standards of consumption. . . . A population policy is, therefore, essential to planning.²⁹

The report later points out that although the purpose of family planning is to reduce the rate of population growth, its immediate effect will be to improve public health. If births are too frequent and poorly spaced, says the Commission, the health of both mother and children suffers, especially under conditions of poverty and malnutrition. Family planning is thus doubly important—so much so that the state should, according to the report, encourage it by educating the public as to its necessity, providing medical attention and contraceptive advice for married couples, and sponsoring research for the scientific understanding of all aspects of family limitation.³⁰

Thus the government has had the courage to commit itself on birth limitation as a part of its program. This commitment is of great significance, not only because governments usually shy away from the subject but also because, in India, the state is looked to for initiative much more than in the United States.

In this policy the government seems to have the support of the educated classes. But what about the 80 to 85 per cent who live in villages, who cannot read, and whose reproductive behavior, unlike that of the

²⁹ *First Five Year Plan*, p. 16.

³⁰ *Ibid.*, pp. 206-207.

upper classes, is presumably governed by customs and attitudes evolved through untold centuries—how will they react to a program of birth limitation?

A conclusive answer to this question must await further research, but some evidence is already available. The author went to India in a skeptical frame of mind on this point, but came back feeling that with a large-scale, concerted, and skilful effort, the villagers of India could conceivably be brought to the practice of family limitation. It is true that they do not practice it now. Women (though not necessarily men) still marry at extremely young ages and ordinarily begin bearing children soon after puberty. They and their husbands are as innocent of contraceptive knowledge as any group in the world. The birth of sons still brings prestige to the parents and conforms to folk definitions of good fortune.

But the villager, however poor and illiterate he may be, is not stupid. He is the product of a hard struggle for survival. Within the limits of his particular world he is a shrewd appraiser of his interest, a hard worker, and a realistic observer. If the population of his village has doubled in the last thirty years, he knows it; if the price of land has risen to dizzy heights, if the size of the average holding has dwindled, if returns from overworked land have diminished, and if the price of things he must buy has quadrupled, he may easily connect these events with the increase of population. He can grasp the fact that, with better health facilities than the village once had, children do not die so frequently and that consequently families are larger than they once were. He knows that grain is requisitioned and food hard to obtain, and that a larger family means a greater strain on his already limited food resources. He understands that change is in the air, that it is to the advantage of children to be educated, and that it is easier to educate children if they are few. In short, the villager is no longer living under conditions in which a high fertility has utility.

If the villager is asked a direct question about how many children he wants or intends to have, he will tend to give a stereotyped response to the effect that this is a matter beyond his control. But if one really discusses the matter with him, it turns out that the stereotyped response is really a verbal formula and not necessarily a conviction, that he has actually thought about his family circumstances as well as those of his neighbors. On more than one occasion I was told by a villager that the community, if given a simple method of limiting births, would make use of it. If, then, the first reaction of the peasant is generally to oppose birth limitation, it is not necessarily an impregnable opposition.

The villager is not caught in the mental strait jacket of a dogmatic religion. Hinduism, a broad and permissive way of life, embraces a great variety of deities, sects, and ritual practices. The very fact that different castes follow different customs, that India's geographical regions have diverse languages and cultures, has taught the Hindu a sense of relativity in ethical and religious matters. On the subject of birth control the semi-

sacred literature of Hinduism is so vast and varied that no single dogma could be derived from it, even if desired. Hindu religious leaders have generally agreed that planned parenthood is a good thing; the main opposition has come from the country's three million Roman Catholics.

True, there is a certain ascetic, or Puritanical, bent in Hinduism. Gandhi, who readily admitted India's overpopulation and the necessity of curtailing population growth, felt that the only acceptable method would be abstinence. The writer found a number of officials who were worried as to whether birth control might lead to the kind of sexual freedom Kinsey depicts in America. But the dominant tendency is to view family limitation as a practical matter, not as an issue to be settled by received dogma. "No Hindu need run afoul of his conscience by practicing contraception."³¹

Actually there are already many birth-control clinics in India, both public and private. The Municipal Corporation of Bombay has created seven such clinics; Hyderabad City has some clinics, Poona recently started a municipal contraceptive service. Some doctors exhibit prominent signs announcing that they are specialists in birth control. Certain Christian missionaries are quietly introducing birth control into rural areas. Stores display contraceptive devices along with their other goods, and magazines and newspapers carry advertisements of such devices. Certain provincial governments are preparing to install contraceptive services. There is no popular outcry against these evidences of public interest in birth control. There is no particular opposition to voluntary sterilization for those with more children than they want.

Although clinical and commercial contraceptive services reach mainly the middle-class, urban people (and by no means all of them), family limitation is also appealing to the working classes. Miss Shakuntala Paranjpye, who has conducted a clinic in Poona for thirteen years, says that at least half of her clients are from the working classes. She has also worked widely in rural areas, where (with her great skill) she has received a favorable response. She, in common with many others, believes that contraceptive services should be an integral part of maternal and child welfare activity, helping couples who suffer from sterility as well as those who suffer from excessive childbearing. The new municipal service in Poona is of this character, and is apparently succeeding well.

One universally acknowledged difficulty is that Western techniques of contraception are not perfectly suited to India. The villager and his wife have little privacy, few facilities, and no money. They almost never discuss reproductive matters between themselves; and they often live

³¹ S. Chandrasekhar, "Demographic Disarmament for India," presidential address, First All-India Conference of The Family Planning Association of India, Bombay, Nov. 30-Dec. 2, 1951, p. 29. See also N. V. Sovani, "The Problem of Fertility Control in India," in Milbank Memorial Fund, *Approaches to Problems of High Fertility in Agrarian Societies* (New York, 1952), pp. 62-73.

with older relatives, who are generally more old-fashioned. A contraceptive, to be acceptable, must either be free or cost almost nothing, must require no facilities to store or use, must occasion a minimum of inconvenience and education to procure and utilize, and must be safe and effective. Since no contraceptive at present quite fits the bill (although some come close), one of the major spheres of research, as envisioned by the government, is the development of devices better suited to Indian peasant conditions.

One of the known methods—the so-called “safe-period”—is currently being tested in India under the joint auspices of the World Health Organization and the Indian Ministry of Health. The tests, conducted with the technical advice of the Population Division of the United Nations, will definitely reveal, it is hoped, whether or not this method can be made effective for Indian women and what the factors are which govern its acceptability or inacceptability, its success or failure.

Doubtless one reason why the “safe-period” is being tested first is that it involves a certain amount of abstinence and thus comports well with the ascetic tinge in Hinduism. It also involves no monetary cost and yet, when properly used, is known to reduce fertility sharply. The big question is whether or not it can be efficiently used by illiterate couples under Indian conditions. There is little disposition to say that only this method shall be tested, or to condemn other methods.

Other research is under way on Indian attitudes and behavior with respect to reproduction. The Population Division of the United Nations and the Indian Government are jointly sponsoring a thorough field study in Mysore that will throw light on fertility patterns, family organization, and attitudes toward family size and age at marriage—particularly as affected by economic conditions in both rural and urban settings.³² Other studies of the same character are being made in a wide rural area by the Gokhale Institute of Politics and Economics at Poona. One survey completed several years ago in Bengal, under the auspices of the Indian Research Fund and the All India Institute of Hygiene and Public Health, indicated that rural women in a Bengal area desire, on the average, only two or three children.³³ While the studies now in progress will deepen our knowledge of the role of reproduction in Indian life and thus lay the basis for possible action by the government, more research will be required to test village reactions to specific types of educational campaigns, to various clinical approaches, and to particular contraceptive techniques.

Relative Assessment of the Demographic Possibilities

We now have four demographic possibilities before us, any one of

³² See John D. Durand, “United Nations Population Study in India,” in Milbank Memorial Fund, *Approaches to Problems of High Fertility in Agrarian Areas*, pp. 153-158.

³³ This study has never been published. Reference to some of the findings is contained in Davis, *Population of India and Pakistan*, pp. 227-228.

which could theoretically stop population growth in India and thus remove the economic depressant stemming from this source. The death rate may rise, mass emigration may occur, or the birth rate may be reduced either by an industrial transition or by a more immediate diffusion of birth control among the peasant population. The last possibility has been dwelt on at some length because, in past thinking about population, it has been too superficially dismissed. The assumption has been consciously or unconsciously made that the demographic future in India will go through stages similar to those through which Western industrial countries and Japan have gone. But the present condition of India throws considerable doubt on such an assumption.

The writings of Notestein contain what has been the general point of view among American populationists. Without citing evidence or going analytically into the matter of social organization, he holds that fertility declines will come to such areas as India only gradually and "only in a period of rising levels of living, urbanization, widespread education, and growing contacts with foreign cultures." Since such developments, he says, would initially reduce mortality more rapidly than fertility, they would temporarily enhance growth.³⁴ Thus Notestein sees no opportunity for reducing fertility in peasant-agricultural societies in advance of the industrial revolution. This is seen in the policies he advocates for eventually getting a reduction in fertility—policies which de-emphasize birth control and amount, instead, to a complete urban-industrial transition.³⁵ At best he sees only a chance to stress those aspects of the industrial transition which might be most conducive to reducing fertility. Six years later, in 1950, we find Notestein modifying his position slightly. He says that at least some of the causal factors in declining fertility "can be fostered in a rural setting."³⁶ He also grants that "appropriate, efficient, and cheap contraceptives are needed to hasten the decline in the birth rate."³⁷ But still he clings to his old position that social conditions must be changed, that these changes will cause mortality to decline first, and that about all that can be achieved is to hold population growth down to the extent that numbers will only double during the next hundred years.³⁸

³⁴ Frank W. Notestein, "Problems of Policy in Relation to Areas of Heavy Population Pressure" in Milbank Memorial Fund, *Demographic Studies of Selected Areas of Rapid Growth* (New York, 1944), pp. 152-153. This article contains no citation to the demographic, economic, and sociological literature.

³⁵ *Ibid.*, pp. 153-155. Among the proposals are the following: more education, development of native leadership, breakdown of caste system, more international trade.

³⁶ "The Reduction of Human Fertility as an Aid to Programs of Economic Development in Densely Settled Agrarian Regions" in Milbank Memorial Fund, *Modernization Programs in Relation to Human Resources and Population Problems*, p. 98. Again this article contains no reference to empirical studies or other literature which might bear out the conclusions.

³⁷ *Ibid.*, p. 99.

³⁸ *Ibid.*, p. 95. For another critique of Notestein's generalizations, see Arthur Bunce, "Economic and Cultural Bases of Family Size in Korea" in *Approaches to*

An assumption in this point of view is that the peasantry in a country such as India is living under the same social conditions that it lived under two hundred years ago, and that unless these social conditions are changed, a high fertility will remain. The first part of this assumption is obviously not true. The conditions of life of the Indian peasant are today fundamentally different from what they were even thirty years ago. The very growth of population in rural areas is itself a new factor. Other new factors are the reduction of mortality, the greater commercialization of agriculture, the introduction of government procurement and rationing schemes, the decline of handicraft industry, the disintegration of the joint family system, the loss of village self-sufficiency, and the decay of caste. In order to draw an agricultural region into fruitful economic contact with the industrial nations, the colonial powers have altered the basis of life of the peasant.³⁹ The rise of nationalism and the achievement of independence have introduced further changes. The measures taken by the Indian government since independence, measures to meet desperate situations which are themselves new, are far-reaching in their social effects. The peasant today is no longer living under the same conditions he once lived under. As a consequence, high fertility is no longer as useful to him as it once was. If he continues to have many children, the chief reason is that he has not yet crystallized his goals in terms of the new setting or found the means of instrumenting new goals. If this much is true, then it follows that furnishing him with a redefinition of the situation and with appropriate instrumentalities may have considerable effect, without waiting until the entire country has become urbanized and industrialized. In other words, if instead of putting the emphasis on the necessity of *bringing about* large scale social changes, as Notestein does, we put the emphasis on the possibility of capitalizing on those changes that have already taken place, we shall probably have a more accurate assessment of the chances of early and direct family limitation in India.

Concerning leadership in underdeveloped areas, Notestein has this to say: "These leaders are the products of their own society and, with conspicuous exceptions, are neither aware of the problems of population growth nor interested in their solution."⁴⁰ This generalization applies neither to India nor to Puerto Rico. In fact, there is evidence that in both coun-

High Fertility in Agrarian Societies, pp. 18-28. Bunce says: "I have seen no evidence . . . that given no social change whatever, birth rates cannot decline. I believe we are assuming far too much dependence on social change in relation to change in fertility."

³⁹ The corrosive impact of colonial control on the social organization of agricultural societies has been ably described by J. S. Furnivall. See his *Colonial Policy and Practice* (Cambridge, 1948), chap. viii; his *Netherlands India* (Cambridge, 1944), chap. xiii; and his two papers in Phillips Talbot (ed.), *South Asia in the World Today* (Chicago, 1950).

⁴⁰ *Modernization Programs in Relation to Human Resources and Population Problems*, pp. 99-100.

tries the leaders are far ahead of leaders in the United States in regard to population policy. The Indian government took the initiative and requested the World Health Organization to give it assistance in helping to solve India's population problem. There is some chance that India will assume leadership in the revolutionary and extremely important step of bringing fertility control to peasant-agricultural populations in advance and to the benefit of the industrial transition.

If the possibility of rural fertility decline has been underestimated, the prospect for a smooth and regular industrial transition has been overestimated. The author sees no reason to believe that India can, or will, become urbanized and industrialized according to the same pattern that the West and Japan have followed. For one thing, the expansion of population that normally accompanies industrialization is too great for India in its present condition to take. A high per-capita production is required, by definition, for an industrialized regime, and India shows few signs of making headway in this direction. Although there is no certainty in such matters, the writer's estimate would be that unless the rate of population growth is reduced soon either by rising mortality or by declining fertility, India will not have an industrial revolution. It is possible to see how sudden rises in mortality would write off the demographic factor and permit rapid economic change,⁴¹ but this would not be a "smooth" transition as contemplated by most people who see industrialization as the likely course.

Fixing our attention on probable events rather than theoretical possibilities, we reach the conclusion that India will probably pursue none of the four alternatives to the exclusion of the others. Social change seldom respects logical alternatives. It looks as though the next quarter century will see some novel experiments in rural birth control and that these may have some success. But it also appears that the requirements for complete success on this front will not be met in time, and that political turmoil will therefore have to help along the process of change both by causing surges of mortality and by liquidating many institutional factors impeding economic development. It may turn out that India will prove incapable of affording the luxuries of democracy. A dictatorship may arise which perhaps finds it easier to industrialize rapidly, to sacrifice lives, and to manipulate the conditions and incentives for obtaining low fertility. But even if political democracy is retained, India's path will doubtless be one of muddling through on several fronts until somehow the demographic obstacle has been overcome sufficiently to permit a checkered and perhaps stormy industrialization and modernization.

INDIAN SOCIETY AND ECONOMIC DEVELOPMENT

Since both demographic and economic change depend heavily on socio-

⁴¹ For a fuller discussion of this point, see *Population of India and Pakistan*, p. 223.

political factors, it is unfortunate that the variety, vagueness, and lack of measurement of such factors obstruct their accurate assessment. Depending on verbal description and intuitive judgment, one tends to see causal relationships *in principle* and then to assume erroneously that they exist *in fact*. The case of India is particularly difficult because of the country's extreme cultural diversity. India is "a very museum of race, of language, and of custom."⁴² Also, she has undergone great social changes which are unequally distributed among regions and groups. One must therefore avoid describing modern Indian society in fifteenth-century terms. How long India has absorbed strong Western influence is seen from the fact that the battle of Plassy, which gave Britain dominance, was fought in 1757. From that time to the present, the entire Industrial Revolution of the West occurred; the United States was created and developed, Japan was modernized, and the entire world transformed. Not one single feature of India's former social organization has remained unchanged.

The old social order was intimately adjusted to an agrarian stage of economic development (plow agriculture with bullock power, petty handicraft, and village self-sufficiency). So adjusted for over two thousand years, it was unsuited in every detail to an opposite, or industrial, type of economy. It was more resistant to economic modernization than the preindustrial social system of northwestern Europe. For this reason the influence of the old social order in the new amalgam that has arisen in India is of great significance.

Yet not all of the current social handicaps to industrialization have their roots in the original Indian society. Some have their origins in the character of Western contact itself, and some in the social disorganization of today. On the social side, for example, the British showed an amazing conservatism. They sought to preserve Indian custom in so far as it did not sharply conflict with their own interests.⁴³ The Britishers who ruled India came from the military, commercial, and landed classes, not from the newly rising industrial entrepreneurs. They possessed a classical education, valued a landed aristocracy, and emphasized commerce and administration rather than technology or production. The history of their land legislation, for instance, shows a static conception of agriculture. The British had an opportunity to transform the economy of India. Things were in shambles from the break-up of the Mughal regime; population was not too dense; rich resources were available; and the strength of the British Raj was beyond challenge. But the British pursued the short-run advantage of a crude specialization of function as between industrializing

⁴² Sir Edward Blunt, *The I. C. S.* (London, 1937), p. 231.

⁴³ "On the whole it may be said that during the first half of the nineteenth century the general trend of administration was conservative. The guiding principle was that expressed in Lord Falkland's words: 'When it is not necessary to change, it is necessary not to change'" (L. S. S. O'Malley, ed., *Modern India and the West*. London, 1941, pp. 592-593).

England and rural India. They provided law and order with as little affront as possible to Indian sentiments. They brought Western education, political expression, transportation, and commerce. But they turned late to the one thing that would have had the profoundest effect, industrialization. Though their own economy was being transformed by the use of fossil fuels and machinery, they assumed all along that agriculture would remain India's principal economic activity. Since machinery and fossil fuels were not applied anywhere to tillage until the twentieth century, this emphasis on agriculture was singularly unpropitious for India's economic development. Agriculture was the one thing hardest to modernize.

Actually, for all their concern with agriculture, the British did not stress means of increasing productivity. They concerned themselves with legal rights, tenures, methods of tax assessment, transport, primary processing, and the expansion of the agricultural area through irrigation. Valuable as these were from the standpoint of total agricultural production, they did not transform agriculture from a peasant, ox-cart type of enterprise. Instead, the British spread further the area and increased the population devoted to undercapitalized, overmanned, small-scale, archaic cultivation. Since it was precisely this type of cultivation to which the old social order was adjusted, its preservation meant also the preservation of much of the old social system. In fact, the economic policy of continued ruralism fitted perfectly the social policy of altering Indian institutions as little as possible. We begin to understand, then, why two hundred years of dominance by the country that invented and pushed farthest the Industrial Revolution produced in India a transition so slow and feeble that not only was industrialization not accomplished but numerous obstacles (not all traceable to the indigenous social structure) were piled up in its way.

SOCIAL REQUIREMENTS FOR INDUSTRIALIZATION

Our purpose, however, is not to engage in historical explanations but to assess the role of present social factors in prospective economic development. In such a task it seems wise, albeit hazardous, to set forth in advance some leading social requirements for industrialization. The question can then be raised as to whether India has or will have these traits.

Any society that achieves economic modernization appears to have, and to require, the following characteristics: (1) nationalism, (2) secularization, (3) a universalistic ethical and legal discipline, (4) vertical social mobility, (5) widespread education, (6) technological training and research. Like any such list, this one is not exhaustive or highly specific. The categories overlap and have a certain vagueness; and one could classify the requirements in wholly different ways. Yet the list offers possibilities as a basis of discussion. None of the traits mentioned is sufficient in itself. All are required and interdependent. If this seems a hard test, it must be remembered that only a few countries have so far achieved economic modernization.

The following discussion, for reasons of space, will consider only the first four requirements. Education and technological training and research, being more a function of deliberate organization than the others, fall less into the category of what we ordinarily call "social."

NATIONALISM

Since nationalism is seen as the root of many evils, including opposition to modernization,⁴⁴ its appearance at the head of our list may seem strange. But without using such a question-begging term as "enlightened nationalism," let us admit that, like other things, it works both ways. It may be so purely emotional and short-sighted in given cases that it defeats itself. But with the world organized as it is, nationalism is a *sine qua non* of industrialization, because it provides people with an overriding, easily acquired, secular motivation for making painful changes. National strength or prestige becomes the supreme goal, industrialization the chief means. The costs, inconveniences, sacrifices, and loss of traditional values can be justified in terms of this transcending, collective ambition. The new collective entity, the nation-state, that sponsors and grows from this aspiration is equal to the exigencies of industrial complexity; it draws directly the allegiance of every citizen, organizing the population as one community; it controls the passage of persons, goods, and news across its borders; it regulates economic and social life in detail. To the degree that the obstacles to industrialization are strong, nationalism must be intense to overcome them. National ambition was a potent element in the industrialization of Japan, Germany, and Russia.⁴⁵

The rise of nationalism, culminating in independence in 1947, has given India a powerful asset in further economic development, an asset that arose only recently. Prior to the late nineteenth century, clan and tribal allegiances, religious cleavages, caste exclusiveness, and regional differences in language and culture, together with a low level of development, prevented an all-India nationalism. Today the country's unity, now that the illusory expectations regarding independence have been sobered, is still tempered by these old cleavages. There are, for instance, approximately 35 million Muslims whose ultimate loyalty (say in a Pakistan-India war) is questionable, and nearly 7 million Sikhs who would

⁴⁴ "The spokesmen of the poorer countries most emphatically favor economic progress . . . , and blame their poverty on previous colonial status or quasi-colonial imperialistic exploitation. At the same time their rejection of colonialism and imperialism manifests itself in a heightened sense of nationalism, the symbolic expression of which consists in the repudiation of foreign philosophies and external behavior patterns and the reaffirmation of traditionally honored ways of acting and thinking" (Bert F. Hoselitz, "Non-Economic Barriers to Economic Development," *Economic Development and Cultural Change*, I, March, 1952, 9).

⁴⁵ Nationalism alone is obviously not enough. If it were, the Balkan and Latin-American countries would be heavily industrialized. The success of nationalism depends in part on the degree to which other ingredients of modernization have been achieved.

prefer a separate state. More troublesome perhaps is linguistic provincialism, which manifests itself in (1) mutual distrust (e.g., of the northern Indo-European speakers by the southern Dravidian speakers, of the Tamil by the Telugu speakers); (2) demands by various linguistic groups to have state boundaries redrawn so as to provide in each case a linguistically homogeneous state;⁴⁶ (3) resistance to the constitutionally declared national language (Hindi);⁴⁷ and (4) resistance to the modernization of scripts.⁴⁸ Furthermore, antagonism between the castes (partly a function of the breakdown of the caste order) is a potent source of disunity in the villages and states as well as in New Delhi.⁴⁹ Clearly the government is balked in some of its attempts to get greater efficiency and is limited in its unity by these old cleavages.

Added to the recrudescence of old difficulties are new ones. A certain amount of national disunity, cutting across linguistic and caste barriers, arises from the contemporary class struggle, in which a rather irresponsible labor movement is pitted against an adamant capitalist class and a ruthless speculative group. Further, on the political side, there is the rapid rise of splinter parties. Although Congress still holds the reins, it appears to be cracking into numerous factions, expressing basic disunities within the society. The Praja party (peasantry and labor), the Scheduled Castes Federation, the Socialist party, the Communist party, the Hindu Mahasabha, the People's party (refugees), the Akali Dal (Sikhs), and the Society for the Rule of Rama were among the many parties active in the 1951/52 elections. Norman Brown lists fifty-one political parties.⁵⁰ As Congress loses its pre-eminence (it captured 45 per cent of the votes for the House of the People in 1951/52), government by coalition, with all its weakness and instability, will become necessary.

In short, though India has achieved nationhood it has not yet acquired sufficient unity and emotional allegiance to accomplish all the changes conducive to rapid economic development. The difference between its

⁴⁶ The most insistent groups have been the Andhra (Telugu) in Madras and Hyderabad; the Kerala (Malayalam) in Travancore, Cochin, Madras, and Mysore; the Maharashtra (Marathi) in Bombay, Hyderabad, Berar, and Madhya Pradesh; the Gujarats (Gujarati) in northern Bombay; and the Gurmukhi in the Punjab. See W. Norman Brown, *The United States and India and Pakistan* (Cambridge, Mass.: Harvard University Press, 1953), p. 215.

⁴⁷ Hindi has been openly resisted as a school subject in areas where some language other than Hindustani is spoken (*ibid.*, p. 210). When Hindi is used as an examination subject for government or military posts, real disadvantages accrue to those in non-Hindustani areas. Also, "language universities" are being founded to the disadvantage of higher education. See Gardner Murphy, *In the Minds of Men* (New York, 1953), pp. 69-75.

⁴⁸ Although Roman script would enormously simplify the process of learning to write the various languages of the country, no language group in the subcontinent is willing to have its language written in such script (Brown, *op. cit.*, p. 215).

⁴⁹ See Murphy, *op. cit.*, pp. 62-69, 93-116.

⁵⁰ *Op. cit.*, pp. 289-290; see also pp. 190-205.

ability to institute fundamental reforms and that of Turkey under Atatürk and İnönü is striking.

SECULARIZATION

Few would maintain that Roman Catholicism stimulated industrialization. If religion had anything to do with the industrial revolution in northwestern Europe, it was the Protestant Reformation that was involved.⁶¹ From a comparative point of view, however, the generalized process by which religion facilitates industrialization can best be designated as secularization, the Protestant Reformation being a specific case. Important aspects of the process are: the decline of the prestige and power of the clergy in favor of the productive classes, the lessening of religious restraints on knowledge and opinion, the relaxation of ritualistic controls over economic activity, and the diminishing reliance on superstition and magic. In so far as these changes have not occurred, popular religiosity tends to sterilize capital in unproductive religious buildings and activities, to stifle technological progress by giving a sacred aura to whatever is traditional, to limit education by confining it to sacred literature and moralistic homiletics, and to waste energy in the strife between one religious faction and another. Even if a state (such as Israel or Pakistan) is founded for the purpose of accommodating people of a given religious persuasion, it finds that it must divest itself of religious control over its affairs if it is to achieve advanced economic development and national strength.

The Constitution of the Indian Union clearly provides for a secular state. Not only does it lay down that "the State shall not discriminate against any citizen on grounds only of religion, race, caste," etc., and that persons of all religions will have equal access to public places and equal opportunities for public employment, but it also says: "All persons are equally entitled to freedom of conscience and the right freely to profess, practise and propagate religion." Each religion has the right to maintain its institutions, acquire property, etc. No one must pay taxes for the maintenance of a religion, and no schools maintained wholly out of state funds may give religious instruction. The secular intent is only mildly qualified by a provision that the state shall endeavor to suppress the use of intoxicating beverages for nonmedicinal purposes and to prohibit the slaughter of cattle.

⁶¹ "By the middle of the seventeenth century the contrast between the social conservatism of Catholic Europe and the strenuous enterprise of Calvinist communities had become a commonplace. 'There is a kind of natural inaptness,' wrote a pamphleteer in 1671, 'in the Popish religion to business, whereas, on the contrary, among the Reformed, the greater their zeal, the greater their inclination to trade and industry, as holding idleness unlawful'" (R. H. Tawney in Foreword to Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, London, 1930, p. 6; see also Tawney's *Religion and the Rise of Capitalism* and Robert K. Merton, "Science, Technology and Society in Seventeenth Century England," *Osiris*, Vol. IV, Part 2, Bruges, 1938). As soon as the emphasis shifts from "capitalism" to "industrialism," much of this voluminous discussion is seen to be confused.

However, constitutional secularism does not mean popular secularism. Indians as a whole are deeply religious. For them, as for others in the Near and Middle East, religion is more than a system of private belief; it is a way of life. Adherents of different religions do not eat or dwell together or intermarry; their relations are economic rather than social. Religion thus has a communal character, which bespeaks its social importance.

Since the Indian Union is now approximately 85 per cent Hindu, the question of the economic effects of religion is best discussed in terms of the particular beliefs, practices, and institutions of Hinduism.⁵² These, having evolved during the many centuries when India was purely a village agricultural society, are naturally adjusted to that stage of economic organization and resistant to change; but certain features are less rigid, some more rigid, than those found in most traditional religions.

Syncretism and Tolerance

One trait of Hinduism that presumably permits, if it does not favor, economic change is its syncretistic, nondogmatic, and rather tolerant character. It has been described as "a complex congeries of creeds and doctrines," including virtually every kind of worship, "ism," and "olatri" known to man.⁵³ Being so diverse, it has no bitter sectarian animosity, no objection to doctrinal nonconformity. This spirit of tolerance, shared by the unlettered masses as well as by scholars, extends even to other creeds such as Christianity and Islam, though not to recently converted ex-Hindus.⁵⁴ Hinduism is thus unusually favorable to the free expression of new ideas and opinions, much more so than Catholicism or Islam.

This tolerance, however, does not extend so fully to social behavior. While Hinduism, often called a social system rather than simply a religion, "gives absolute liberty in the world of thought, it enjoins a strict code of practice. The theist and the atheist, the sceptic and the agnostic may all be Hindus if they accept the Hindu system of culture and life." "What counts is conduct, not belief."⁵⁵ Conformity to the social forms is obtained by opinion rather than by force. The violator of the code is not killed, maimed, or jailed; he is disapproved or outcast by his brethren and forced to do penance to become reinstated. Such ostracism can control behavior in a village society, but it loses its effectiveness in an urban milieu; and it is weak against the strong who decide to flout it. Both the Parsees and the Sikhs have long followed norms other than those laid down by Hinduism, yet they have enjoyed prestige. Orthodoxy, by

⁵² A longer treatment would not, of course, ignore the energizing role of minor religious groups such as the Parsees, Jains, Christians, and Sikhs.

⁵³ E. A. H. Blunt, *The Caste System of Northern India* (London, 1931), pp. 272-273.

⁵⁴ L. S. S. O'Malley, *Popular Hinduism* (Cambridge, 1935), pp. 232-234.

⁵⁵ Sir Sarvepalli Radhakrishnan, *The Hindu View of Life* (New York, 1927), pp. 38, 77. Quoted in O'Malley, *Popular Hinduism*, pp. 1-2.

emphasizing the letter rather than the spirit of conduct, permits essential change through subterfuge and legal fiction.⁶⁶

Actually, Hinduism tolerates even differences in behavior, because such differences are linked with caste. Since each caste has its own customs, very few principles of Hindu conduct are observed by all castes. What strikes the eye is the great contrariety of practice.⁶⁷ True, the standing of a caste is judged in part by how well it observes the pure Hindu norms, of which the Brahman is the arbiter; and this provides a strong basis for conformity. Since, however, Hinduism evaluates negatively certain essential occupations (e.g., tanning, weaving, and fishing) and certain means of survival (beef, fowl, fish-eating), widespread conformity is impossible and differences are therefore implicitly supported. Hindu orthodoxy, in fact, refers primarily to rules of separation as between groups and to rules of conformity within groups. Each group can do what it wishes so long as it does not contaminate another group through some form of forbidden contact. This feature, in sharp contrast to a dogmatic religion which, like Islam, lays down rules for all persons alike, makes Hinduism peculiarly susceptible to social change once individuals are emancipated from the particular groups—caste, clan, village, sect—in which the norms of conformity apply.

The Lack of an Organized Church

The general flexibility of Hindu thought is undoubtedly connected with the lack of an organized church. "As an institution, Hinduism partakes of the formlessness and unorganized character of all Eastern religions."⁶⁸ It thus stands at the opposite extreme from Roman Catholicism. It has a hereditary class of sacred individuals (Brahmans) at the apex of the social pyramid; it has domestic, temple, and funeral priests and mendicant holy men; it has innumerable temples; but it has no supreme central authority like the Pope, no single over-all financial or political structure that one could call the Hindu Church, holding all this together. This being true, Hinduism in the modern setting is weaker than it would otherwise be, particularly in dealing with today's highly centralized state. Though measures for modernization encounter religious

⁶⁶ An amusing instance is told by Hilda Wernher. A Brahman woman, visiting a non-Hindu household, cannot accept even fruit if it is on a plate or cut with a knife, but if given her by hand she can take it home and presumably eat it. The food taboo is seen merely as a slight obstacle to be circumvented by one artifice or another (*My Indian Family*, New York, 1943, pp. 9-10).

⁶⁷ With reference to Malabar: "The lower castes have their types of offering specially pleasing to *Kali*, such as the sacrifice of cocks and goats. There is a famous cock-festival at Cranganore . . . and amidst obscene songs and actions, numerous rocks are sacrificed to propitiate the deity. Several castes have their special modes of sacrifice" (S. Subbarama Aiyar, *Economic Life in a Malabar Village*, Bangalore, 1925, p. 141).

⁶⁸ A. C. Bouquet, *Comparative Religion* (3rd ed., rev.; Harmondsworth, 1950), p. 152.

opposition, it is not an opposition regimented from the top down. It is rather a spontaneous and inchoate opposition which can be circumvented by the organized state. The Hindu Mahasabha, a modern political organization fighting for the interests of orthodox Hinduism, has attempted to supply what Hinduism has lacked in political centralization, but it has had scant success. It has lost at the polls because the public was interested in nationalism rather than in militant organized Hinduism as such.

The Hindu Belief System

If any beliefs approach general acceptance in Hinduism, they are those of karma, dharma, and Brahmanism. Assuming that the soul passes through innumerable earthly existences, the first doctrine holds that "a man's state in any particular life is determined by actions (*Karma*) in previous lives." Thus is explained "the patent inequalities of life, the fact that one man is born to honour, another to dishonour, that the wicked so often flourish and the good have to endure misery and suffering."⁵⁹ The doctrine plainly fits a static caste society, because it places the possibility of changing one's status in the *next* life, not in this one. The notion of dharma, complementing that of karma, obligates the individual to fulfill the requirements of his inherited position in his present life. "Some well-known lines in the Bhagavata Gita inculcate the supreme merit of performing one's caste duties. Perfection, it is said, is only attained by the man who does not deviate from the duties of caste."⁶⁰ Thus the individual cannot alter his present position, for that is a product of his behavior in previous lives, but he can gain a better position in the next life *provided he observes well the duties (dharma) of his currently inherited station*. In other words, he gets ahead supernaturally by not getting ahead actually.

We have only to add Brahmanism, the belief in the sacredness and supremacy of the Brahmins, to see the close connection between Hinduism and a static caste order. The Brahmins, traditionally monopolizing the sacred learning and standing at the apex of the caste pyramid, are both the guarantors and the chief beneficiaries of the system. It is a religious duty to feed and protect them, to accept their leadership, to observe one's inferiority to them. "It is they who help to enforce the extreme penalty of excommunication imposed by the caste for such offenses as marrying out of caste, eating forbidden food, and adopting a prohibited occupation." They deny their ministrations to the outcaste and thus deprive him of ceremonial grace.⁶¹

Nobody knows how far the Hindu belief system actually shapes modern conduct. After a three-year study of a Punjab village, Young concluded in 1931 that karma is a practical philosophy coloring the villager's whole outlook on life. Crooke, writing on Punjab religion in 1897, took an

⁵⁹ O'Malley, *Popular Hinduism*, pp. 7-8.

⁶⁰ *Ibid.*, p. 47.

⁶¹ *Ibid.*, p. 48.

opposite stand.⁶² Not enough research using modern sampling and interviewing methods has been done to decide the question. In principle the system is highly resistant to social change, but in practice, particularly in the twentieth century, this tendency is certainly modified by other factors. Past discussions of the economic influence of religion have given too much weight to the philosophical and speculative beliefs contained in the sacred and priestly literature, and too little to everyday attitudes and practices. An attempt, say, to understand French society on the basis of official Catholic doctrine would be a fantastic failure. It may well be that the Hindu belief system was partly responsible for the fact that the industrial revolution did not *originate* in India or take hold earlier, but it is of little or no importance in economic development now.

Fatalistic Asceticism

Much the same can be said concerning the Hindu stress on otherworldly asceticism, which clearly fits the belief system mentioned above.

The Indian, it is said, thinks of this world as a circular and unending journey, an ocean without a shore, a shadow-play without even a plot. The whole world of phenomena is simply the more or less purposeless and sportive energy (*lila*) of the Absolute Being, who is beyond definition. Hence the ideal life is that of "non-active activity," the attainment by a well-defined technique of an exalted state of absorption in which one negates every movement of life, and becomes one with the changeless Absolute, beyond good and evil. Thus the world-renouncing ascetic is the type universally admired, and his renunciation is in no sense altruistic or philanthropic, but purely self-regarding. . . .⁶³

If the actual world is illusory, the only reality worth attention being beyond this one, what is the use of trying to do anything in this world except achieve religious beatitude? Why try to help one's fellow man in his struggles with this life, when what he needs is eternal salvation and that depends on him alone? Why take government seriously, since it is temporal and therefore unreal? Why pursue science, since a knowledge of this world is only a second-rate and valueless knowledge?

That fatalistic asceticism is strong in Hindu thought there can be no doubt. Since Hinduism is remarkably given over to speculation, ritual, and concern with individual otherworldly salvation, there is a minimum concern with good works as proof of one's virtue. Worship is mainly an individual, not a community, affair. The dampening effect of such an outlook on economic development is plain. It negates science by taking the easier path of speculation about the other world. It rejects technological change as being pointless. It disavows competition by giving

⁶² Both cited in *ibid.*, pp. 28-29.

⁶³ A. C. Bouquet, *op. cit.*, p. 152.

the highest prestige to those who renounce the world and its riches. The fact has often been noted that Indians smile and laugh little. They are a sad, depressed people. To the extent that they carry in their heads this pathetic feeling of the idiocy of life, this is easy to understand.

But no society could survive on the basis of such an outlook. Hinduism has always exhibited contrary currents, and certainly does so today. The question arises as to whether the ascetic strain is effect or cause. If the Indian has had a hopeless religion, it is perhaps because he has lived under hopeless conditions.

Two Indian economists hold that Hindu fatalistic submissiveness was due to the chaotic conditions prevailing for generations prior to British rule, and to the poverty, disease, famines, and caste disabilities which lasted long afterward. They would agree with Sir Radhakrishnan that under the stimulus of Western contact, Hinduism is undergoing a renaissance, "a protest against theological dogmatism, priestly power, and mere words or scholarship."⁶⁴ They say that the eclecticism and tolerance of Hinduism make the process of redefinition easier than would be the case with most religions. "It is exactly those people and communities like the Marwaris, Jains, and Bhatias among the Hindus, and the Khojas, Memons, and Bohras among the Muslims, who may be supposed to be the most amenable to the influence of orthodox religion, that have taken a prominent part in the new industrial life of the country and have shown a remarkable adaptability to Western industrialism." Just as medieval Christianity opposed modern economic development but later changed, so the same is happening to Hinduism.⁶⁵ Admittedly there has been much other-worldliness to overcome, and there is justification in Hinduism for ego-centric disregard of public welfare. "Finer spirits," says Radhakrishnan, "have on the whole tended to spend their energies more on soul development than on social reform or national progress."⁶⁶ It is impossible to estimate how much negative influence the Hindu *Weltanschauung* still has on economic development, but in view of the changes occurring it is probably small.

Magic and Superstition

The gross supernaturalism of popular Hinduism can be illustrated in many ways. Anthropomorphism, for example, is exhibited in the routine of idol-worship in the temples. The idols are bathed in the morning, have red pigment put on their foreheads, are ornamented with flowers, have lamps turned on at night, etc.⁶⁷ In the more elaborate temples the images are fed and clothed several times each day, their teeth are sym-

⁶⁴ *Ibid.*, p. 352.

⁶⁵ G. B. Jathar and S. G. Beri, *Indian Economics* (9th ed.; Madras, 1949), I, 92-97.

⁶⁶ In O'Malley, *Modern India and the West*, p. 352.

⁶⁷ J. Murray Mitchell, *The Great Religions of India* (Edinburgh, 1905), pp. 67-68.

bolically brushed, they are given a siesta, music is provided for them.⁶⁸ Another manifestation is the great reliance on astrology. Educated and uneducated Hindus alike consult the astrologer in connection with births, marriage arrangements, journeys, agricultural operations, the laying of cornerstones, the stock exchange, horse races, etc.⁶⁹ Again, among the lower strata at least, evil omens, charms, demons, and witchcraft are everpresent realities. For instance, the Balahis (a low caste in central India) are said to "suspect the machinations of super-human forces behind every striking event in their lives." By intricate magical devices they try to secure the favor of well-meaning spirits and protection against the wiles of malignant goblins. "Their whole life is a struggle with these illusive super-human beings. . . . It is wise, in the opinion of the Balahis, to take them into account in all undertakings. . . ."⁷⁰

Anthropomorphism, superstition, magic, and sorcery may have nothing to do with "higher" Hinduism; indeed, they tend to appear wherever people are illiterate, isolated, and poor, whatever the official religion. But the fact remains that Indians are saturated with these practices and that Hinduism as such has made little if any attempt to discourage them. From the standpoint of economic development, it seems that people thus saturated can hardly grasp the abstract principles of science and technology or put their imagination to work on the practical necessities of production. Since their alternatives are severely limited by magical taboos and fears of countless sorts, they are thrown back on purely traditional methods as the only safe way out.⁷¹

In addition to the general effect which gross supernaturalism may have, there are specific elements in Hinduism which decrease productivity. The best known is cow-reverence, which even the Constitution cannot ignore. "The State," says the latter, "shall endeavor to organise agriculture and animal husbandry on modern and scientific lines and shall, in particular, take steps for preserving and improving the breeds, and prohibiting the slaughter, of cows and calves and other milch and draught cattle." The writers of the Constitution realized the contradiction between "modern and scientific" animal husbandry and the proscription of cattle slaughter, but they had to make this concession to popular prejudice. The contradiction gives the Five Year Plan an insoluble problem. The plan points

⁶⁸ O'Malley, *Popular Hinduism*, pp. 95-96. Also, Aiyar, *op. cit.*, p. 141.

⁶⁹ O'Malley, *op. cit.*, pp. 48, 194-196.

⁷⁰ Stephen Fuchs, *The Children of Hari* (New York, 1951), pp. 265-266.

⁷¹ One can claim that supernaturalism adapts itself to modern technology, but whether such adaptation is creative is another question. A pathetic instance of "adaptation" is given by Fuchs, *op. cit.*, p. 286: "Some simple Balahis along the railroad worship the iron rails along the line in the conviction that the train is propelled by the help of Kali Mata. Another Deo, important for the progress of the train, is Topya Deo, the signal pole. Whenever a train approaches, his *topi* (hat) fall down, therefore the Deo's name: Topya Deo. He is supposed to draw the train near to him and to urge it farther, Kuku is applied to the signal pole, and a coconut is broken in honour of Topya Deo."

out that the total supply of roughage can maintain only 78 per cent of India's enormous cattle population, and the supply of concentrates very much less. Since at least one-tenth of the bovine population consists of unserviceable and unproductive cattle, the removal of useless cattle is the most important solution. But it is also, says the plan, the "most difficult problem of cattle development." Technologically, of course, it is not difficult to slaughter cattle whose value as livestock is nil. The difficulty lies on the religious side. So the plan says, since "the wholesale slaughter of useless animals is not a practical proposition, some other remedy has to be thought out to meet the situation. One such remedy is the opening of large camps in areas where the fodder supply to-day is unutilized."⁷² But clearly this is a noneconomic solution, because the transport of cattle to such areas is expensive, and if such areas do exist, the fodder might better be employed to feed *productive* cattle. The taboo on beef-eating is also uneconomic because, if a large cattle population is to be maintained, occasions arise when the best use to be made of them is to eat them, usually before rather than after they die a natural death. The wandering Brahmani bull is known to be an unproductive consumer of food, to be a bar to scientific breeding; yet he continues to wander and to be fed, and, though castration is practiced to some extent, it is still considered to be somehow immoral and the task of special low castes.⁷³

In addition to cow-reverence, a minor economic waste is incurred by the taboo on the slaughter of monkeys and other pests, not only because of the crops they eat but also because of the time wasted in scaring them off one's crop to some other man's field.

Again, night-soil is used less for manure than it could be because only very low castes will handle it.⁷⁴ Hinduism has a lively sense of ritual filth (or ceremonial pollution) which limits the handling of certain materials such as hides, oil seeds, manure (except cow dung), fish, fermented beverages, bamboo and cane, dirty clothes, etc. These restrictions, plus the generally low position of artisans and the taboo on ploughing by the Brahman and Radjpūt agriculturalists, all tend in the direction of giving a low status to essentially productive work, which has the disadvantage of separating technological competence from education and removing it from the realm of aspiration and interest.

On the other hand, Hinduism, in contrast to medieval Catholicism and Islam, has at least not obstructed economic development by banning money-lending. Tolerating in theory as well as in practice the taking of interest, it has to this extent fostered capital accumulation, however much it may have prevented such accumulation in other ways.

⁷² Planning Commission, *The First Five Year Plan: A Draft Outline*, July, 1951, p. 111.

⁷³ A description of village cattle handling is contained in Charlotte V. Wiser and William H. Wiser, *Behind Mud Walls* (New York, 1930), pp. 77-92.

⁷⁴ R. G. Allen in E. A. H. Blunt, eds., *Social Service in India* (London, 1938), p. 157.

Religious Support of Caste and Familism

In numerous ways Hinduism lends support to the traditional interlocking caste and family structure of India. It provides a supernatural explanation for the existence of the caste hierarchy, gives the Brahman priestly caste an exalted status and a monopoly of Vedic learning, requires as a religious duty the observation of intercaste taboos, excludes certain castes from the temples and additional castes from certain ceremonies, permits each caste to worship deities peculiar to itself, and gives an eschatological rationalization of the entire system through the doctrine of karma. The support lent by Hinduism to the family is similar. The joint family is not only a social unit but also a religious unit. It involves, for example, ancestral worship, especially of agnatic ancestors. Every Hindu wishes at least one son and grandson, because only they can perform the ceremony essential to his spiritual progress after death. A religious obligation is laid upon parents to get their children married (before puberty if possible), and marriage itself is a sacrament so permanent that it can be broken by neither death nor divorce. The wife is required to worship her husband, to indulge in no religious ceremony or sacrifice which involves herself alone. The solidarity of the agnatic household is further cemented by the worship of domestic or household gods, by the inheritance of debt, by family rituals signifying the transitions of life, and by the identification of the widow with her deceased husband's family.

In so far as Hinduism supports these two institutions, it tends, for reasons explained in a later section, to impede modern economic development. But today its support is not strong enough to counteract the numerous forces inimical to caste and familism. Evidence suggests that this aspect of Hindu obstruction to modernization is declining.

The Prospect for Secularization

On net balance, what do we come out with in regard to Hinduism's effect on future economic development? The truth seems to be that any religion originating in a peasant-agrarian society offers numerous obstacles to modern economic progress. The obstacles disappear as people either come to take the religion less seriously or alter its character. Some traditional religions lend themselves to such development more readily than others. If Roman Catholicism is strong today in economically backward countries, it is strong partly because it had an affinity for such countries and partly because it is powerful enough to oppose economic progress successfully. If Protestant countries are generally more progressive, the reason is that Protestantism represents a new form of Christianity arising in a period of change and hence more compatible with industrial civilization. In the same way Shinto represents a new religion adapted to modern nationalism and industrialism. Hinduism, among traditional religions, appears to be unusually malleable. It is eclectic, syncretistic, diverse, and tolerant of new opinions. It has no centralized authority or highly or-

ganized clergy. It is not an international community, and its host nation, where 85 per cent of the people are Hindu, has had no trouble declaring itself a secular state. It may well be, then, that Hinduism will need no Protestant movement or state-created Shinto to adapt itself to the modern age. Reform movements may, without organized schisms, bring it into line with the new nationalism of India. To be sure, popular Hinduism is ridden with superstition, burdened with hallowed custom, and enervated by a fatalistic outlook, but there is evidence that these aspects are changing, and that the support of caste and familism is dying. Although one can hardly be certain, it seems improbable that Hinduism will constitute a leading obstacle to economic development.

ETHICAL AND LEGAL DISCIPLINE

An industrial society, no less than any other, requires discipline, and discipline of a peculiar type. Typically, however, contemporary agrarian countries after two centuries of Western contact are socially disorganized. The old order has crumbled without a new one being put firmly in its place. Individualism, skepticism, emancipation, competitiveness—such features of Western democratic industrialism have penetrated the cracks and interstices of the old social system, corroding and undermining it until it has largely disintegrated.⁷⁵ Whereas a viable industrial society has evolved ways of controlling and utilizing the powerful solvents present in competitive individualism, the old agrarian order has difficulty coping with them.

Though antiquarians may mourn the passing of the traditional structure, the fact remains that social change is impossible without some decay and disorder. In the slow evolution of industrialism in Western Europe, the change was so gradual and so indigenous that a new order arose parallel with the crumbling of the old. There was social disorganization, but it was seldom crucial; the new structure, though delicately balanced, evolved remarkable controls of a legal, political, and moral character. On the other hand the countries which today still have a peasant-agrarian economy are caught in the net of a partially industrialized and universally commercialized world. Already disorganized, they have the problem of building up a new social order quickly. They want an industrial, a national, and usually a democratic society. Such a society cannot be founded simply on individualism, competition, and freedom. It requires responsibilities and co-operative action in behalf of collective goals. The extent to which these emerge has much to do with economic development.

In the case of India we note that Hinduism has often been charged with failing to instil a sense of everyday morality, of fair play and integrity, especially in the impersonal world of business and government. In a way this is true, but the causes must be understood. No traditional

⁷⁵ J. S. Furnivall has best described this process. See his *Colonial Policy and Practice* (Cambridge, 1948) and *Netherlands India* (New York, 1944).

agrarian religion has an ethic ready-made for the secondary, bureaucratic relationships of an industrial society. Its teachings have necessarily been focused on the unseen world of gods and spirits, for these are the symbolic apparatus of an unlettered people, and in so far as these have been a means of moral control, the control has been geared to the primary social relationships in which the people lived—in India the caste, the kindred, and the village. It is too much to expect that such a religion will suddenly produce a morality suited to a new society. Its ethical prescriptions are all of the wrong kind. It inevitably teaches an ingroup exclusiveness, a narrow morality confined to specific primary-group relationships, because in the old order this was sufficient. Anyone outside the immediate cohesive groups was fair game for sharp practice.

Today the Indian's honesty in business and government is less than it should be, often in an extremely shortsighted way. The illegal exactions from the peasantry by petty officials are notorious, so much so that the ministries of several provinces have organized anticorruption drives.⁷⁶ With respect to business, complaints are numerous against the adulteration of products, manufacture of spurious or defective products, price manipulation, black-market activity, etc.⁷⁷ It is true that corruption in government and business is found in all countries, and that it has not necessarily prevented economic progress.⁷⁸ But political jobbery, nepotism, graft, fraud, and lawlessness in high places become particularly important when the state is deliberately attempting to foster industrialization. At best there is danger of suffocating economic activity under the thick blanket of government control; when such control is rotten, it can defeat the goal it is supposed to achieve.⁷⁹ Furthermore, rapid forced-draft economic development requires severe sacrifices which people will hardly wish to make if they feel they benefit merely the corrupt but powerful few. Business as such has no morality. Its inherent anarchy has to be controlled by law and public opinion, which make it to the businessman's interest to observe the rules. If there is no public integrity, no strong sentiment behind the rules, even the best of laws will be evaded. In India today there is strong cynicism concerning the motives of government and business leaders. It apparently arises not only from seeing corruption but also from taking it for granted. Morality still tends to be for the caste, the

⁷⁶ Manilal B. Nanavati and J. J. Anjaria, *The Indian Rural Problem* (4th ed.; Bombay, 1951), pp. 434-435. McKim Merriott points out that North Indian villagers seen by him disliked irrigation canals and tube wells because of the graft required by officials in charge ("Technological Change in Overdeveloped Rural Areas," *Economic Development and Cultural Change*, No. 4, Dec., 1952, p. 270).

⁷⁷ See C. N. Vakil and P. R. Brahmananda, *Planning for a Shortage Economy* (Bombay, 1952), p. 257.

⁷⁸ This view is maintained by G. T. Garratt, *An Indian Commentary* (London, n.d.), chap. iv.

⁷⁹ See E. da Costa, *Indian Industry Today and Tomorrow* (Bombay, 1947), pp. 156-161. "This danger of political pressure in the distribution of industrial largesse is very real."

family, and the village. Between the ruler and the ruled, the employer and the employee, the seller and the buyer, moral compunctions in the new setting are not yet strong.

If Hinduism cannot be expected to provide the moral basis for the new order, perhaps nationalism will. If so, its collective goal and motivation must be implemented in terms of a viable social structure. One obstacle to such implementation is the social distance separating those who govern from those who are governed. In the old days this took the form of complete subservience to authority,⁸⁰ but this attitude changed somewhat during the period of nationalist agitation. Among the peasantry, however, there is toward government an exaggerated dependency attitude called *ma-bap-ism*, or "mother-and-father" dependency. "A source of continual distress to Indian workers on projects of technological change,"⁸¹ it arises because government officials, educated, westernized, urbanized, live in a world completely strange to the peasant. Not understanding these officials, the peasant distrusts their motives when they bring new things beyond his ken and beyond his rational control; yet, by long tradition, it is their duty to command and his to obey. Also, the officials are often corrupt and therefore costly to the peasant—corrupt because they can be so with impunity, the peasant not complaining for fear of retaliation.⁸²

If the dependency attitude expresses itself in fearful distrust on the one hand, it also expresses itself in childish expectation on the other. The peasants expect miracles to be performed *for* them without their doing anything. Most see change as something "to be handed them from above, as indeed, it so often has in the past. . . . [they] know that their technology is precarious and are therefore conservative; confronted with the enormous consequences of technological change, they can only throw themselves upon the paternalistic mercy of the innovator, making him totally responsible for the possible effects of his great power over them."⁸³ Such *ma-bap-ism* impedes progress even under a dictatorial regime; it does so to a much greater degree in a democratic framework, for the latter rests on the assumption that people will exert an intelligent and persistent effort in their own behalf.

The *ma-bap* attitude is encouraged in cities as well as villages by the concept of the welfare state. This idea, a late product in highly industrialized democracies, has been taken over by the Indian government (and by other underdeveloped nations) as if applicable to an overpopulated country in the early stages of industrialization. Highly paternalistic, it not only encourages a dependency attitude but also leaves the false impression that economic change can be accomplished without hurting any-

⁸⁰ O'Malley, *Modern India and the West*, pp. 610-613, 628-629.

⁸¹ Merriott, *op. cit.*, p. 269.

⁸² *Ibid.*, pp. 270-272. The Wisers, *op. cit.*, pp. 153-177, eloquently voice the villager's attitude in a moving chapter called "Let All Things Old Abide."

⁸³ Merriott, *op. cit.*, p. 269.

body, without sacrifice. Scarcely any idea could be more damaging, for India cannot achieve rapid economic progress without severe sacrifices on the part of its people. It is to elicit their willingness to sacrifice that a new moral climate, a new belief in the value and efficacy of work and privation, must be engendered. An official attitude that encourages people to sit back and wait for the government to take care of them defeats one absolute essential of economic progress.⁸⁴

Dishonesty in government and business, apathy and fear and pessimism in the masses—these reflect the partial absence of a new moral discipline to take the place of the old. In his emancipation from his former narrow institutions and groups, the modern Indian runs the risk of not acquiring a more generalized sense of discipline and purpose. The exclusiveness of the primary group is in danger of being transformed into a ruthlessness of the individual. Against this tendency the legal, secondary controls of urban and national society are inadequate unless popular sentiment lies behind them. India has been plagued by diverse legal systems, diverse legal languages, diverse cultural groups. The mixing of all these under European contact and with politico-economic ferment has offered the individual countless chances of evasion. Bribery on the railways,⁸⁵ corruption in administration, kickbacks (*dasturi*) to Indian labor jobbers in mines, factories, etc.,⁸⁶ callousness to death and human suffering, evasion of taxes, speculation in food commodities—these do not demonstrate a “breakdown” of public morality, but they do show a deficiency in the spirit and the implementation of discipline which endangers orderly economic development.

VERTICAL SOCIAL MOBILITY

An industrializing society requires, as well as facilitates, a large amount of social mobility. To acquire a new and more complex division of labor, it must induce people to leave old occupations and go into new ones. It must select people for top positions in the new structure according to talent and training rather than according to birth. Not only will this secure better leaders for economic enterprise, but once it appears clear that a person may get ahead regardless of his origin, the population will tend to work harder, exercising more ingenuity and being more productive. Also the striving to get ahead, when given free reign, expands the number and variety of economic demands. These not only feed upon the increasing productivity of the industrializing society but also furnish an expanding market on which it in turn can feed. Social mobility has the further

⁸⁴ Vakil and Brahmananda, *op. cit.*, repeatedly criticize the paternalism of the Five Year Plan. They call for equality of sacrifice, for a production rather than consumption emphasis, and for all-out effort. See chap. viii and pp. 122-126, 198-199, 286-287.

⁸⁵ Daniel H. Buchanan, *The Development of Capitalistic Enterprise in India* (New York, 1934), pp. 187-188.

⁸⁶ *Ibid.*, pp. 337-339.

advantage of dissolving the old social order rapidly, for when the individual can climb socially he can escape the shackles of parental authority, of kin solidarity, and local custom. An advantage also accrues from the fact that the desire to advance oneself or one's children through education and long-range career-planning tends to lower fertility and thus facilitates better training and care of children, less child mortality, and hence less human waste. Finally, if people have increased opportunities to get ahead in the actual world, they tend to lose their preoccupation with the supernatural world, investing less of their capital and effort in tombs, temples, monasteries, and rituals and more in productive enterprise. All told, vertical mobility seems absolutely essential to successful industrialization, and with respect to any nation attempting rapid economic development the question arises whether the blocks to mobility are too great.

The effect of social stratification on economic growth is generally discussed in terms of the inequities of the old system. It is implied that the main barrier to modernization lies in the gross inequalities of the still existing preindustrial class structure. From the standpoint of the necessities of industrialization, however, the thing that is wrong with the old class system is not its inequalities⁸⁷ but its lack of mobility between strata. Without inequality of rewards, mobility would be meaningless. The conditions favoring mobility are in fact two: inequality of rewards, equality of opportunity.

In the case of India one has to acknowledge that the indigenous, or seventeenth-century, social organization was probably more inimical to individual social mobility than any other that ever existed. It accomplished this result primarily through the institution of caste, secondarily through the joint family and the dynastic state. Under a caste regime the individual was held to his caste group by various devices such as punishment for dissimulation of caste, identification with the caste's hereditary occupation, punishment in some cases for pursuing another occupation, dependence on the caste brethren for economic help, restriction of marital selection to those within the caste, and exclusion from any higher caste. Since the whole society was organized on a caste basis, any person without a caste was an anomaly, the only assumption being that he had been outcasted. Since the lowest castes, the untouchables, were excluded from the amenities of Hindu society, the idea of one of their members rising to a high social position was unthinkable; yet they constituted a good fraction, perhaps one-sixth, of the total population. The system was built throughout on the principle of fixity of social status.

By virtue of caste endogamy, all members of a joint family belonged to the same subcaste. Kin solidarity thus reinforced caste solidarity. In

⁸⁷ Admittedly, inequalities in underdeveloped countries are generally greater than in mature industrial ones, though the Westerner tends to exaggerate the difference. See Theodore Morgan, "An Underdeveloped Area Expert: South Asia Model," *Economic Development and Cultural Change*, II (April, 1953), 29-30.

addition, the joint family owned its property in common and shared its earnings; its members were subject to the authority of the family head; and debt was hereditary. Since the exact composition of the joint household was variable, the more prosperous households were larger because they attracted indigent relatives. The system anchored the individual firmly to his relatives.

In turn, the dynastic state (e.g., the Mughal Empire) offered little opportunity for advancement. It was a state apparatus conceived in static terms—a small military elite deriving its support from a fixed peasantry. Its members lived at a level so far beyond that of the ordinary Indian as to be virtually incomprehensible to him. The state had no policy of technological change. Assuming a static social structure and a static state of the arts, its policies contributed to making this assumption true in fact.

All of this, however, was more than two centuries ago. Since much has happened in India since then, does enough of the old system remain to constitute a major block to social mobility now?

Caste and Vertical Mobility

There can be no doubt that caste has been badly shattered, but equally no doubt that it still persists and hinders mobility, particularly in rural areas. The statement is sometimes heard that India has "abolished" caste, reference being made to the new Constitution; but no government can eliminate with the stroke of a pen an institution so ingrained and so ramified as India's caste system. What the Constitution does is twofold. First, it refuses any legal recognition of caste in the state's relations with its citizens. All citizens are equal *vis-à-vis* the government; they have equal access to the courts, to public employment, public schools, public wells, etc. The exceptions demonstrate the rule, for they refer only to the special advantages to be given to the scheduled (untouchable) castes and tribal peoples in order to compensate for their actual economic and social disadvantages. Second, the Constitution specifically bans as illegal any overt manifestation of untouchability. "Untouchability," it says, "is abolished and its practice in any form is forbidden. The enforcement of any disability arising out of 'Untouchability' shall be an offense punishable in accordance with law."

The first of these constitutional actions is not new, for it had been for some time a British policy. The second one is new, for the state had previously banned as illegal only certain kinds of discrimination against untouchables, whereas the new Constitution provides a blanket declaration against all such discrimination. Such an over-all provision cannot be, and is not being, enforced; but the path is constitutionally open for such enforcement. A major blow has thus been struck at what has been the main although progressively declining barrier in the Hindu system. At the same time, it must be recognized that untouchability is only one aspect

of caste. As a total social complex, the system has of course not been abolished by the Constitution.

In addition to the legal side, other evidences of the declining influence of caste on social mobility are available. Caste can function well only in the static village where one's status from birth is known to everyone; it cannot function easily in the more anonymous city. Since the city is the place where the new expanding opportunities are to be found anyway, and since the migration to the cities is great, the persistence of caste in the rural village is of only secondary importance in preventing mobility. It is symptomatic that the Brahmans are being seriously challenged by the other castes, particularly by the middle ones. In a democracy they are bound to be challenged, for they constitute only a little more than 6 per cent of the population. Indeed, the organization by castes helps the process of rebellion, because the Brahmans are marked by their caste. An economic oligarchy may arise and work together in a democracy (as in the United States about 1800) if it can avoid being identified as a group, but when it is saddled with a caste name and a long historical tradition, it can easily be dethroned by a resentful majority.

The relaxation of taboos on intercaste contact has been widely noted. In successive visits to India, for example, Norman Brown noted that the limitation of certain castes to particular occupations and interests is falling into discard. "Merchants, who in ancient India hardly aspired to political power—except with Jains and Buddhists—during the British period, under the influence of the British example, became eager politicians and ardent nationalists." Also, "physical contact between members of different castes . . . is now a commonplace." Interdining has become common "among the socially elite in cities; to some extent it exists now in towns; it is said even to be appearing in villages. Some persons who in 1922 strictly avoided it were practicing it in 1948. . . ." Even "marriages across caste lines, which fifty years ago raised a public scandal in the Hindu community, are now common enough not to produce newspaper comment. Participants frequently seem to have no difficulty with either family or with caste members."⁸⁸

That modern industry is furnishing an escape from low-caste village status is suggested by the composition of the labor supply. The majority of factory workers come from the impoverished, landless, laboring castes of the villages. They accept the irksomeness of factory work and travel great distances to reach it, precisely because their village situation is hopeless.⁸⁹ The movement involves women as well as men. The vast majority of female factory workers are recruited from the depressed classes.⁹⁰

Once in the industrial milieu, the erstwhile dreg of the village is no longer docile. As one Indian labor specialist puts it, "Indian labour is in

⁸⁸ Brown, *op. cit.*, p. 52.

⁸⁹ Buchanan, *op. cit.*, p. 294.

⁹⁰ Mohinder Singh, *The Depressed Classes* (Bombay, 1947), p. 173.

revolt. All over the country are heard the rumblings of discontent."⁹¹ Since World War I the trade union movement, begun in 1875, has achieved a stormy but persistent vigor. The state apparatus has been used to aid labor, regulating working conditions, limiting child labor, recognizing trade unions, immunizing unions against civil and criminal liability for strikes, providing for the settlement of disputes, and setting minimum wages.⁹² These developments give to a large and new stratum, drawn principally from divers lower castes, the means of pressing its desires for advancement. Since working conditions are still bad (though better than in the village), there is plenty of basis for agitation. Each advance gives rise to new demands for still greater gains. "Labour," says Rastogi, "is unappeased by the concessions made to it."⁹³ This militant labor movement, abetted by the state, bypasses the static caste system by substituting a dynamic class struggle between capital and labor. It is a hard, bruising struggle because of the inconsistency between a labor force growing in size and an economy mired in poverty. A spiraling process of debate and strife is therefore occurring, quieted only momentarily by national independence and the Congress plea for industrial peace. As the struggle increases, the niceties of caste will be forgotten, the way being open to anyone strong enough to come out on top in the rough-and-tumble.

True, the industrial population of India is still small in relation to the total population. Yet we see already how easily a little industrialization can affect the caste system. It is also true that organized Indian labor, drawn from the least-educated classes, has been understandably slow in providing its own leaders. "Labour leaders are mostly outsiders, professional and public men, politicians and social workers . . . almost as remote from the rank-and-file members of the unions as are the heads of large corporations from their employees."⁹⁴ The labor movement has accordingly not provided as much of an opportunity for capable individuals to rise as it has in the United States or Britain, resembling in this the labor movement in Latin America. Yet there is little doubt that organized labor soon will provide such an opportunity in India.

Already the reservation of government posts for the scheduled castes and the attempt to satisfy all sections of the electorate by putting up candidates from various strata have brought members of the lowest castes into high positions. Monhinder Singh points out that even in the villages, because of the lure of government jobs and economic opportunity, the depressed castes have become conscious of the advantages of educating their children. As a result, "a middle class is coming into existence amongst them." The lot of this class, he adds, is not enviable, because high-caste Hindus do not mix freely with them and they dislike the company of illiter-

⁹¹ T. N. Rastogi, *Indian Industrial Labour* (Bombay, 1949), p. 27.

⁹² *Ibid.*, chap. viii and Appendix E.

⁹³ *Ibid.*, p. 28.

⁹⁴ *Ibid.*, p. 132.

ate members of their own castes,⁹⁵ but the damage to the caste system is obvious.

It is hard to escape the conclusion that caste is losing its power to stop social mobility in India. Though still a living institution, it has been weakened even in the rural areas, and in the cities and industries, the diffusion centers in modernization, it has been unable to prevent the development of an open-class organization. It will probably hang on for generations in an attenuated and modified form,⁹⁶ but it can hardly of itself prevent economic growth.

The Joint Family

If the caste system has shown some disintegration, the joint family has shown even more. The main change, again, has been in the towns, and it has occurred within the last eighty years.

In 1861 it was noticed that, however divisible the possessions of a Hindu family might be theoretically, they were in fact so rarely distributed that many generations constantly succeeded each other without a partition taking place. Twenty years later fissiparous tendencies were seen in operation. Partition had become very frequent, and a family which had lasted for more than two generations was said to be rare. . . . The process of disintegration has gone on steadily and without check since then, and it is becoming increasingly common for families to be dissolved into their component parts on the death of a father. . . .⁹⁷

Notice, however, that the household is often not partitioned until the death of the father. It is still a joint family up to that time, in contrast to the average Western family, which persists only until the children marry. Among some lower castes, because of housing scarcity, separation often occurs while the father still lives, but not among the upper castes except in highly Westernized groups.⁹⁸ Surveys show that the average household in contemporary India is not large. A study of Poona in 1936-38 found, for example, that the average (omitting households containing only one person) was only 4.43 individuals.⁹⁹ In the United States in 1940 the average family (excluding those with only one person) contained approximately 3.75 persons.¹⁰⁰ It is clear that in Poona, a small city,

⁹⁵ Singh, *op. cit.*, p. 174.

⁹⁶ The persistence of a milder caste system in Ceylon, despite the greater urbanization and education there, shows the tenacity of the institution. See Bryce Ryan, *Caste in Modern Ceylon* (New Brunswick, 1953), chap. i and Parts 2 and 4.

⁹⁷ O'Malley, *Modern India and the West*, pp. 382-383.

⁹⁸ *Ibid.*, p. 385.

⁹⁹ D. R. Gadgil and staff, *Poona: A Socio-Economic Survey*, Part I, Economic (Poona, 1945), p. 68.

¹⁰⁰ Calculated from data given in *Sixteenth Census of the United States, 1940*, Types of Families, p. 25. The definitions make the United States and India only roughly comparable, but certainly do not exaggerate the difference.

most households can consist of little more than the nuclear family. In rural areas the households are larger, but their size is diminishing.

The joint family's decline has been due in large part to the very forces which it would obstruct if maintained. With agriculture increasingly commercialized and trade and wages more exclusively monetary, land has been turned into a salable commodity. Better transportation has facilitated migration. This, plus the new division of labor, has destroyed the occupational homogeneity among family members. Population growth has made family holdings incapable of expansion and has thus forced younger members out of the household. Testamentary legacies became common and were legally recognized by an act of 1870 embodying the English law on wills. The legal age at marriage was made higher than the customary age in 1930. Finally, Western education undermined the joint family by diffusing individualistic ideas and by facilitating differences of outlook and attainment as between members of the same extended household.

Actually, it is difficult to hold together several nuclear families in one household. Internal frictions in Indian domiciles, especially among the women, have been notorious. Only a static village society can accomplish the feat of maintaining the joint household. When opportunity arises, people tend to retire from the arrangement, each nuclear family living alone. For this reason, although the joint family still does interfere with social mobility in different ways,¹⁰¹ it is not likely to do so effectively or for very long. Future economic development does not seem gravely threatened from this quarter. The faster the joint family is liquidated, the greater the impetus to vertical mobility and to economic enterprise.

CONCLUSION

In discussing the ability of India to meet the social requirements of industrialization, we have encountered the same old institutions repeatedly—caste, joint family, rural village, Hinduism. The backbone of a social system originally adapted to an oxcart and handicraft stage of economic development, these institutions have to some extent lingered on in India and exercise a negative influence on economic development today. But none of them exists in its pristine form. They are all changing radically. The old dynastic state which thrived on the indigenous social system has been displaced by a modern democratic state which, with all its paternalism and bureaucratic fumbling, is committed to the doctrine of economic progress and hence to finding its way around the old institutions.

In most cases we have found that a given part of the social organization is changing in a favorable direction, and that this part alone is not likely to impede economic growth in a decisive way. A caution must now be added. When all of the social impediments (some of which we did

¹⁰¹ See Murphy, *op. cit.*, pp. 29-31; Fuchs, *op. cit.*, pp. 26-27; Jathar and Beri, *op. cit.*, pp. 88-92.

not discuss) are added together, they mount up to a rather impressive amount of obstruction. Although the evidence suggests that even though the social structure will not actually stop economic growth, it must be granted that this structure will probably slow the change. If so, then we must recall the other difficulty from which India is suffering—overpopulation in relation to resources. The two together (a partially archaic society and overpopulation) may well constitute such a barrier to steady economic progress that the present program under a democratic government will bog down completely. The characteristic of democracy is that it finds it difficult to effect a quick social revolution. Since in India time is important, economic progress would be enhanced by certain kinds of social revolution. It will therefore require every kind of skill and the greatest determination to achieve a rapid industrialization in India without allowing the country to fall into hands that are militantly revolutionary—i.e., Communist hands. It would be unfair to the free world and to Indian aspirations to overlook this reasonable interpretation. The obstacles to economic growth in India are far too great for a few billion dollars in foreign aid or the praise of democratic freedom to clear up.

Population and Labor Force in the Industrialization of Japan, 1850-1950

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JAPAN AS A CASE STUDY¹

THREE CENTURIES ago the population problems of Asian lands were relatively simple. Asia then included only one-third the number of people who now secure a limited subsistence from its crowded rice lands, its dry plains, and its eroded hills. As elements of the culture of the West expanded eastward, the stability and order of centralized governments and controlled economies replaced the civil strife and the hazardous inefficiencies of self-sufficient groupings. Export crops were introduced, subsistence was increased, and the force of epidemics limited. Mortality declined, but as the life in the peasant villages proceeded in the routine of the centuries the number of children born was not decreased proportionately.

As numbers became superabundant, governments sought solutions through extending irrigation projects, improving agricultural techniques, and redistributing people. There was a general lack of awareness of the elementary fact that population cannot increase indefinitely within a finite area, no matter how expansible the resources. It was more comfortable to evade than to wrestle with the fundamental contradictions of an expanding technological culture whose ultimate welfare problems increased in approximate ratio to its economic efficiency and its humanitarianism. Yet analysis of the historical developments in area after area reveals these contradictions. Order, economic development, and medical technologies permitted the decline of death rates, while ancient ways of living and thinking among the peasants insured that birth rates remained at or near the levels that had been essential to biological and cultural survival in earlier centuries.

¹ This introduction is reproduced with permission from the writer's "Population Increase and Manpower Utilization in Imperial Japan," *The Milbank Memorial Fund Quarterly*, XXVIII (July, 1950), 273-278. Minor changes and deletions have been made.

Assistance in the economic development of Asian countries is discussed today as an international responsibility. Its justification is phrased in terms of political, economic, and humanitarian goals that together constitute a rational good for recipient and donor nations alike. There are critical differences between this contemporary movement and those that preceded it under imperial auspices, but the basic similarities are sufficient to raise serious questions concerning the demographic consequences. Many students of the East, and probably most demographers, suspect that in the long run the major consequence of socially unplanned economic action will be more people living within an all-pervasive poverty. Other students see today's potentialities for subsistence so expansible as to make the problem of man's numbers in the foreseeable future one requiring only minor adjustments. Hence it becomes essential to search within the experience of the past, and particularly that of Asia, for experience that will permit analysis of the demographic consequences of economic development. The classic historical experiment is Japan.

The processes of population increase, distribution, and manpower utilization in an industrializing Japan were similar to those in the countries of the West. In premodern Japan some 30 million people secured a precarious subsistence from the limited land. Deficiencies in the quantity and quality of the food available for local consumption combined with the general ignorance of medical and sanitary practices to make peasant and urban dwellers alike vulnerable to the disorganization and the physical destruction of typhoon, flood, and fire. Famine and epidemic were so common as to be noted in the chronicles only when they became devastating forces of extinction over wide regions. People and culture survived only because the attitudes, the values, and the taboos of family, community, and state were compulsive forces channeling the lives of women into early marriage and frequent childbearing.²

The opening to the West, and particularly the power-oriented state that followed the Meiji Restoration, brought an expanded and more intensive agriculture and an accelerating industrialization that provided employment opportunities for the youth of the countryside and moved a once-

² This is not to deny the existence of abortion and infanticide as folk techniques of population control in premodern Japan. The critical question is not their existence but the extent of their practice throughout the population and the magnitude of their impact on the number of live births allowed to survive the process of birth and hence become subject to the very high rates of mortality that existed in the Japan of that period. The analysis of the hazards implicit in day-to-day living and the recorded losses from famines, epidemics, and the cataclysms of nature indicate that death rates must have fluctuated irregularly on a very high level. Hence the existence of a relatively unchanging total population in the eighteenth and early nineteenth centuries would have necessitated a birth rate that, for the country as a whole and over substantial periods of time, equaled the death rate. The fact that Japan's population was not declining precipitantly throughout the last century and a quarter of the feudal period means that the contemporary reports of the frequency of infanticide must be gross exaggeration if applied to the country as a whole.

peasant people cityward. Mortality declined even during the early decades of modernization. Fertility changed more slowly, for the resistances of an ancient and integrated rural culture were buttressed by the resources of a state whose pre-eminent goal involved the creation of political and economic power within an oligarchic social structure. The forces generated by the industrialization process were more compulsive than those that had evolved in the agrarian world of the past, though, for even the conservative forces of a society continuous for millennia could not achieve that segmentation of culture and personality implicit in the coexistence of a changing economy and a stable social system. It was impossible to base the industrialization essential to power on an illiterate peasantry. And a former peasantry, educated, concentrated in cities, subject to the pressures of a pecuniary economy, and exposed to the potentialities of that economy for material advancement and psychological liberation, could but question if it did not evade the obligation of abundant parenthood.

The first three quarters of a century of controlled modernization produced appreciable declines in death and birth rates. By the thirties fertility was falling more rapidly than mortality. Mechanical projection was tempting and many "predictions" were made. Although they varied in the complexity of their mathematics, all assumed continued declines in fertility and mortality, without explicit consideration of the social and economic developments required for the achievement and support of the numbers forecast. The majority of these estimates indicated that the population would increase to some 90 millions by 1960 and reach a maximum of perhaps 100 to 115 millions some time after the end of the century. Eventually the people of an industrialized Japan, as those of an industrialized West, would cease to increase. Moreover, as contrasted with the West, the period of transition would be shortened and the multiplier would be less. Japan would take about a century and three-quarters to achieve relative stability in numbers at low birth and death rates, and population increase would be three- or fourfold. This, it should be noted, is the "optimistic" picture of the decade before World War II.

If we examine the transformations in the geographical distribution and the internal structure of the population, the situation in Japan is again comparable to that in the West. The proportion of the population that was rural declined with relative consistency from 1872 to 1940; the *number* of people in the rural areas changed little between 1872 and 1930, and declined thereafter. Cities and nonagricultural employment absorbed their own natural increase and the major portion of that of the rural areas beyond maintenance requirements. Youth left agriculture and the rural areas, adjusted early to the relatively greater economic opportunities and the freer social atmosphere of the cities, founded their own families at considerably later ages than would have occurred in the ancestral villages, and limited the numbers of their children to correspond more nearly to the realities of a pecuniary economy. Declining fertility and hence the solution to

the problems of growth created by modernization appeared to inhere in urbanization, itself an essential correlate of industrialization. Residential and occupational movement away from the peasant village and its agrarian activities was the overt manifestation of the cultural and psychological transformation that signalized the "Westernization" of the Japanese and their escape from the economic difficulties of increasing numbers.

Japanese experience demonstrates that the population growth which accompanies industrialization may be time-limited in the East as in the West. It is essential to note, however, that in Japan a unique combination of political, economic, and social factors facilitated industrialization, urbanization, declining mortality, and declining fertility. Even under these particular circumstances, generally more favorable than those that exist elsewhere in Asia, the modernization process involved a population increase of more than two and one-half times within its first century. The sheer magnitude of the numbers involved is significant if Japan is regarded as a laboratory experiment—and the problem of how Japan utilized those increasing numbers is just as relevant a part of her demographic history as is the description of how changing fertility and mortality generated the numbers.

There is a further and formidable barrier to the generalization of Japanese experience as a basis for assessing probable occurrences in other modernizing Asian areas. Japan achieved her economic-demographic transition through the intermediation of an imperial system that utilized the products of other regions of Asia without contributing proportionately to the modernization of the subject peoples. The process of capital formation itself involved the assertion of the supremacy of the state over the welfare of the individuals. Thus, whether considered in relation to the people of Japan or to those of the conquered areas, the "success" of Japan's solution to the demographic problems of modernization is not a sufficient answer to the question of its relevance to planning for the future in other areas. Hence it becomes essential to examine the demographic development of modern Japan in somewhat more detail, with emphasis on the magnitude of the population expansion, its relationship to industrialization and urbanization, and the interconnections of demographic and economic transformations as manifest in changing patterns of migration and manpower utilization.

THE FORMATION OF THE PATTERN, 1868-1920³

If a demographer with modern American conceptions and analytical techniques had studied in Japan in 1850, he might well have drawn a

³ The materials in this section are abstracted from chap. iv, "The Dynamics of Population in the Period of Seclusion," and chap. vi, "The Demographic Transition: 1850-1920," in a forthcoming study of the population of Japan. The major sources are the annual registration data published in *Nihon Teikoku Tokei Nenkan*, the statistical yearbook of the Japanese Empire, 1882-1920, and the registration compilations of 1898, 1903, 1908, 1913, and 1918.

pessimistic conclusion about the possibility of raising the Japanese level of living in the long run. Apparently Japan was then in a position comparable in some respects to that of Haiti at present. The density of population appears to have been somewhere in the range of 500 to 1,000 per square mile of arable land, with very narrowly limited opportunities for expanding the area under cultivation. The population derived an almost irreducibly low acreage income from the pursuit of agriculture. The prospects for industrial development must have appeared very discouraging, in view of the poverty of resources, both human and material, that could be applied to that end. Yet in the course of seven decades Japan raised her per-capita income to a level which, though hardly enviable by the standards of the United States or Western Europe, was far above that of all other Asiatic nations and of most African and Latin-American people as well. This feat was accomplished in spite of the fact that the population of these already painfully overcrowded islands more than doubled during the interval.

Population Increase

The increase of the population of Japan was in process in the last half-century of the feudal period itself, and it quickened as modernization advanced. The change during the first critical decades after the opening to the West is conjectural, but the balance of the evidence is that some growth occurred.⁴ The first of the comprehensive reports of the Meiji period, that of 1872, indicated a population of over 35 million. Reported rates of increase rose gradually but persistently, from less than 1 per cent in the seventies and eighties of the last century to about 1.5 per cent in the early decades of the twentieth century. Over 56 million people were enumerated in the census of 1920. Population had increased perhaps 60 per cent in the period of less than half a century that separated the Meiji Restoration from the first modern census of Japan, that of 1920.

The increase in the numbers of the Japanese was sufficient to constitute a formidable burden long before the spectacular annual increases of the twenties called the attention of Japan and the West alike to the population problem of Japan. In 1888 there were 39.6 million persons with *honseki* in Japan. In 1898 there were 43.8 million. By 1908 the number had increased to 49.6 million. By 1918 the *honseki* population was 59.7 million. There were 17 million more Japanese in 1918 than there had been in 1888, only 30 years before.⁵

⁴ The last of the reports of the shogun, that of 1852, had indicated a population of about 30 million, including estimates for *eta*, *hinin*, samurai, daimio, and the other classes excluded from the Tokugawa counts.

⁵ The registrations include the Japanese outside Japan with legal domicile inside the country. The problem of the accuracy of these early summations of the registers is a complex one; here it may be sufficient to state that the general picture of increase is valid, although the individual figures and the specific differences at successive time periods cannot be taken as precise measurements of the facts.

All the age groups in Japan's population were increasing, with consequent pressures that ramified throughout the economic and social system. There were almost 10 million more adults aged 15 to 64 in 1918 than there had been in 1888, and almost 5 million of them were men who were claimants to positions in the labor force. By 1918 men entering the labor market at ages 15 to 19 were over four times as numerous as those aged 65 to 69 who had either retired or ended effective participation. The dependent youth who would be the labor cohorts of the future were increasing year by year; boys under 15 numbered less than 7 million in 1888, over 10 million in 1918. The number of women in the reproductive ages was moving sharply upward. It should be emphasized that this description of the increasing numbers of the Japanese pertains to the three decades that ended in 1918, not to the three decades that began in 1920 and ended in 1950.

Economic Change

Severe dislocations in subsistence possibilities and employment opportunities followed the opening to the West. The tax structure and the other fiscal policies of the government led to peasant expropriation. The transfer of the common lands to government ownership undermined self-sufficiency in fodder, fertilizer, and fuel. Many of the agricultural activities and domestic industries of the countryside were ruined. The cultivation of cotton and the household production of thread and textiles collapsed with the importation of standardized products at lower prices. The area in sugar cane was cut three-fourths in the five years between 1877 and 1882. Imported kerosene replaced wax-tree and rapeseed oil. Paper made in factories from wood pulp replaced the hand production of the past. And so the story went. To the peasant household, the situation required the development of sources of income other than agriculture. To the business leaders, the situation offered abundant labor so cheaply and under such conditions that the costs and risks of capital investment were minimized. The resolution of the economic pressures on the increasing population came through the rapid development of sericulture as a source of direct agricultural income, the establishment of additional household industries throughout the countryside, the migration of boys and girls to the developing urban areas and to nonagricultural employment, and the temporary utilization of young girls in factory dormitories.

The adjustments of the rural people to the new economic situation occurred rapidly. The percentage of all households engaged in agriculture declined from 71 per cent in 1884 (20 prefectures) to 64 per cent in 1904, 60 per cent in 1909, 58 per cent in 1919. The proportion of these agricultural households who were also engaged in domestic or supplementary industry, including sericulture, increased fairly consistently from less than one-fourth in 1884 to more than one-third in 1919.

The broad perspective of the fifty-year span that separated the Restora-

tion from World War I indicates a major transformation in the number and the characteristics of the industrial labor force. The number of workers employed in factories with five or more workers had reached half a million by 1904; in 1914 it was 1.8 million. This movement toward industrialization was patterned strongly by the historical economic and familial values. The clearest illustration lies in the economic utilization of women. The movement of girls to the factories was an adjustment both to the precarious balance of subsistence in the agricultural villages and to the compulsions of the new industries to reduce their labor costs to a minimum. The total number of women in factories employing ten or more workers, excluding government factories, increased from 51,000 in 1882 to 426,000 in 1895-1900, 637,000 in 1905-09, and 829,000 in 1910-14. Women constituted 59 percent of the workers in 1895-99, 71 per cent in 1910-14. The preponderance of women was even greater in the textile factories. Here the number of workers increased from 76,000 in 1899 to 90,000 in 1909—and four-fifths were women. Young girls were preferred and employment was terminated before marriage. Girls could be secured cheaply, and their employment fitted in with the traditional status structure of the Japanese family. In 1909 only 45 per cent of the 90,000 women in the textile factories were over age 20. Almost one-third were between ages 16 and 20, while one-fourth were under age 16.⁶

Population Redistribution

The economic propulsions to migration were severe as the old social and economic milieu disintegrated in the last decades of the Tokugawa Shogunate and the early decades of the Restoration. The political and cultural changes involved in the transition from feudalism to national state necessitated both a new stability and a new migration. Daimio and their retainers no longer traversed the great roads to Edo (Tokyo) for years of alternate residence. The economically favorable locations became the ports accessible to the West rather than the castle towns of the feudal lords. Cities that had served as centers for the conspicuous consumption of the elite now declined, their handicraft industries crumbled, and their laborers were forced to return to the land or to roam the countryside. Vagrancy became an acute problem, doubly dangerous because landless samurai might become the focal points for organized revolt. Political and military struggles added further to the numbers of the dispossessed. All these movements that accompanied a great politico-social transformation largely escaped official statistics.

Movements outward to the less densely settled areas and inward to the urban concentrations were alike present in the early years of the Restoration. In the last century of the Tokugawa *bakufu*, the Tokaido, the Kinai, and the northeastern regions had declined in population. Acces-

⁶ Tsuchiya Takao and Okazaki Saburo, *Nihon Shihonshugi Hattatsu shi Gaisetsu* (*Outline History of the Development of Japanese Capitalism*) (Tokyo, 1937).

sibility to the tax agents of the shogun and limited economic opportunity had been powerful stimuli to escape, either as vagrants in the cities or as labor in the more remote regions. Famines and their associated pandemics decimated country and city alike; infanticide was alleged to be a factor of depopulation in many areas. Population appears to have increased only in the advanced southwest and in the isolated regions beyond the mountains.

The possibility of lessening or escaping taxation by migration largely disappeared with the Restoration, for taxation was national and enforcement more rigid. Famines and pandemics decreased in number and in intensity with improved transportation, access to foreign markets, and epidemic control programs. The movements of people gradually altered to conform more closely to the economic potentialities at the changing technical levels. Relatively large increases occurred in the less densely settled north-eastern regions, in part under the stimulus of national ameliorative programs. These regions appear to have absorbed approximately one-third of the population increase of the period between 1872 and 1885. However, the industries, the construction, and the service activities of the new era were concentrated in the Tokaido and the Kinai—and here people moved. The Tokaido alone absorbed about one-fourth of the increase of the early Restoration period. Southwest Honshu, Kyushu, and Shikoku, with over two-fifths of the total population in 1872, absorbed only one-fourth of the increase in the next fifteen years.

Provincial Redistribution, 1903-18

Rapid population redistribution proceeded along with the economic expansion of the early decades of the twentieth century. Total resident population, 48.5 million in 1903, increased one-fifth to reach 58.1 million in 1918. An increase of 10 million people in 15 years in crowded Japan necessitated substantial redistribution if acute overcrowding of the agrarian areas was to be avoided. That redistribution occurred; and it took two major forms. Numerically most significant were the movements to the cities of Tokyo, Yokohama, Nagoya, Osaka, Kyoto, and Kobe. The prefectures containing these cities absorbed 3.7 million people, two-fifths of the nation's total increase of 9.5 million. The industrializing prefecture of Fukuoka in southwestern Japan increased its population by more than one-half million. The only other prefecture with an increase of comparable magnitude was Hokkaido, and here the increase of 1.1 million was compounded of frontier expansion and urban growth.

The 39 prefectures outside the eight centers of absorption included both lesser cities and rural areas. They differed widely in physical resources, density of settlement, and extent of poverty. Considered as a totality, their increase of 1.9 million in the period from 1903 to 1918 was two-fifths that of all Japan.⁷ Rates of increase approached the national

⁷ Measurement of population distribution and migration in the period from 1903

average in the economically backward regions of the northeast but virtually disappeared in the agrarian prefectures near the developing conurbations. The only prefectures of appreciable increase in the southwest were those that offered employment opportunities outside agriculture: Wakayama, Hiroshima, Nagasaki, Miyazaki, Kagoshima, and of course Fukuoka.

Urbanization

The prefectural redistribution of the population was in major part a product of urbanization, the colonization frontier of Hokkaido alone constituting an exception during this early period. The urbanization that resulted from the concentration of employment opportunities in limited areas lessened the pressure of increasing numbers on the land, for it removed potential gainful workers at the same time that it gave to rural families sources of income outside agriculture. Urbanward movement was more important than frontier expansion as a demographic safety valve even during the early decades of economic development.

The commune of 10,000 population may be taken as the rough demarcation between rural and urban areas.⁸ The communes of 10,000 or more population constituted less than one-fifth of the total population in 1888 but they absorbed three-fourths of the total increase in population that occurred between 1888 and 1918.⁹ (Table X.1.) Towns of 10 to 50 thousand increased in number and in population as smaller places were thrust upward from the "rural" class, despite a continuing loss through the passage of towns into the category of cities. Large cities of 100,000 or more population included 6 per cent of Japan's total population in 1888, 12.6 per cent in 1918.

The urbanization of the population structure of Japan was comparable to that which occurred in other countries in early periods of industrialization, perhaps proceeding more rapidly, although the inadequacies of the data preclude close comparisons. The development unique to Japan was

to 1918 is hampered by the plethora of difficulties involved in the allocation of people by place of *honseki* or place of "present residence," but the phenomenon of differential increase was so outstanding that even the deficient statistics of the Meiji period serve to blur the outlines of the process rather than to conceal its existence. It should be added that Okinawa was also reported as having a sizeable increase, but registration was seriously deficient even as late as the thirties.

⁸ Commune is used as a convenient term to include *mura*, *machi*, and *shi*.

⁹ The classification of communes by size groups for the present resident population is selected here, for it permits a more realistic evaluation of the demographic transformation than the dichotomy of urban (*shi*) and rural (*gun*). The classification by size of commune is available throughout the period only for the present resident population. Comparison of the data of the 1920 enumeration with those of the 1918 registration compilation indicates that the present resident compilation was more accurate than the *honseki*, though both erred seriously for individual cities. The population in cities was 9.965 million in the 1920 census, 6.897 million in the *honseki* population of 1918, 10.843 million in the present resident population of 1918. The population of the six great cities as a group was, respectively, 5.479 million, 3.547 million, and 6.136 million.

the spectacular role that six cities played in the urbanization process: Tokyo, Yokohama, Nagoya, Osaka, Kyoto, and Kobe. In 1888 the 2.4 million people in these six cities constituted 6 per cent of the total population of Japan, 82 per cent of that of cities of 50,000 or more. In

TABLE X.
THE PRESENT RESIDENT POPULATION OF JAPAN BY SIZE OF COMMUNE,
1888-1918*

SIZE OF COMMUNE	1888	1893	1898	1903	1908	1913	1918
Population (in thousands)							
Total.....	40,106	42,060	45,403	48,543	51,742	55,132	58,087
Under 10,000.....	34,936	35,344	37,302	38,550	38,843	39,907	39,545
10,000-49,999.....	2,214	3,412	3,774	4,446	6,009	7,431	8,968
50,000-99,999.....	534	789	829	1,077	1,353	1,856	2,282
100,000 & above.....	2,422	2,515	3,498	4,470	5,537	5,938	7,292
Per-Cent Distribution							
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 10,000.....	87.1	84.0	82.2	79.4	75.1	72.4	68.1
10,000-49,999.....	5.5	8.1	8.3	9.2	11.6	13.5	15.4
50,000-99,999.....	1.3	1.9	1.8	2.2	2.6	3.4	3.9
100,000 & above.....	6.0	6.0	7.7	9.2	10.7	10.8	12.6

*1888-1908: Tables XI, XII, and XIII, pp. 108-120, in *Annexe to Japan, Bureau de la Statistique Generale, Etat de la population de l'Empire du Japon au 31 decembre 1908*. 1913: Table VII, pp. 180-183 in *ibid.*, 1918. 1918: Table IX, *ibid.*, 1918.

1918 the 6.1 million people in these same six cities constituted 11 per cent of the total population of Japan, 64 per cent of that of cities of 50,000 or more. Tokyo had grown from 1.3 million to 2.3 million, but its rate of increase was dwarfed by that of the other five cities. Osaka grew from 443,000 to 1.6 million, Kobe from 116,000 to 593,000.

The urbanization of the late nineteenth and early twentieth centuries should not be exaggerated; in 1918 less than one-third of the Japanese lived in places of 10,000 or more population, while only one Japanese of each six lived in a city of 50,000 or more. However, urbanization has an inherent significance that far transcends the mechanical facts of differential concentration of people over the surface of their national territory. The urban people were physically removed from the feudal agrarian milieu. They were subjected to stimuli and pressures that necessitated change rather than stability. Their social structures and their family systems bore the initial shocks of changing technologies, the altered routines of living and working, the gradual individualization of behavior, and the faltering secularization of values. Here the small-family pattern evolved, gradually becoming more widespread and more tenaciously held within the urban groups as it spread slowly outward through the rural areas.

A slowing rate of growth of the rural population is the usual adjustment of people in the shift from agrarian feudalism to industrial urbanism. And so it was in Japan. There was an accumulation of additional people in the rural areas during the early decades of economic transformation and population increase, however "rural" is defined. This pile-up of people on the land that accompanied the initial declines of mortality was slowing by the early twentieth century. In fact, the evidence is reasonably conclusive that it was virtually eliminated in the more prosperous and the urbanized areas, although the statistics are too defective to permit acceptance of the evidence that rural depopulation had begun.

THE INTERWAR DECADES, 1920-40¹⁰

Growth and Distribution

There were 56.0 million people in Japan Proper in 1920. In 1940 there were 73.1 million. This increase of 17 million in two decades was greater than the entire population of the Philippine Islands in 1939. It was as large as that of all Korea in 1920. The rate of increase was not particularly high, only 35 per cent in two decades, and it was lower in the thirties than it had been in the twenties. The overwhelming practical import of the increase of population to economic and military developments in Japan, the Empire, and to the East in general was not lessened particularly by the fact that it might have been higher. Each year there were more than three-quarters of a million additional claimants to the products of the Japanese land and the Japanese industries. Demographic fact alone dictated a highly dynamic economy if the levels of living of the people were to be maintained.

High densities of settlement had evolved in Japan by 1920, and these were accentuated sharply in the decades that followed. In 1920 there were 380 persons for each square mile of land area. In 1940 there were almost 500. The increase of 17 million between 1920 and 1940 would have peopled an empty Japan with 115 persons per square mile.

Densities of settlement much higher than five hundred per square mile may be and often are cited: Java, the lower Ganges, the valley of the Nile. However, Japan is a land of mountains and of swift turbulent rivers, where less than one acre in each six is cultivable. If we make our assumption somewhat more realistic by distributing people over land that is cultivated or potentially available for cultivation, we secure startling density figures. In 1920, in this land still predominantly peasant, there were

¹⁰ The materials in this section are abstracted from the chapters on population increase, manpower utilization, and migration in a forthcoming study of the population of Japan. The major sources are the quinquennial enumerations of the population of Japan, 1920, 1925, 1930, 1935 and 1940. Complete citations and annotations are given in: Irene B. Taeuber and Edwin G. Beal, Jr., *Guide to the Official Demographic Statistics of Japan, 1868-1940: Population Index*, Oct., 1946, Supplement, 36 pp.

almost 2,500 persons per square mile of cultivable land. In 1940 there were 3,200.

The assumption of equal distribution of people over land is fantastic, even though the land utilized be that defined as cultivable. Neither agricultural nor nonagricultural people have ever been distributed in Japan with any approach to uniform density over area. In Tokugawa days, as today, there was a broad pattern of crowded coastal lowlands and sparsely settled mountain regions. There were also the sharp diversities that flowed from the interpenetration of urban and rural ways of living in a land where climatic and topographic variations were multitudinous, the culture old, and the people traditional.

The map of industrial opportunity was superimposed on an ancient pattern of agrarian and commercial opportunities. The patterns of differential growth from the Restoration to 1920 were described earlier on the basis of the limited registration statistics of the period. The forces of industrial and urban concentration continued into the interwar decades. The trend throughout these decades was toward a continuing, even an accelerating, growth in the regions already densely settled. Two-thirds of Japan's total increase between 1920 and 1940 was localized in the Kanto, the Tokai, and the Kinki. Within these regions growth was concentrated in the provinces containing the great conurbations of Tokyo, Yokahama, Nagoya, Osaka, Kyoto, and Kobe.

Demographic concentration had as a necessary corollary relative stability or decline outside the limited areas of rapid growth. The rural impact of urban increase was more severe because population increase itself was slowing. The people remaining outside the six metropolitan provinces and the other foci of attraction were producing fewer youth to contribute as migrants to the great urban maelstrom. Total intercensal change reached its maximum amount, 4.8 million, in 1930-35; the rate of change reached its maximum of 7.6 per cent in 1925-30. However, seven provinces had their maximum absolute and relative growth in either 1925-30 or 1930-35. In nine provinces the growth in the period from 1935-40 was greater than that for any preceding intercensal period.

This was no automatic process of redistribution occurring in Japan but rather the changing responses of people to the changing economic opportunities available to them. And as people responded and population accumulated, the locale of opportunities itself shifted, in part as resultant of the overwhelming force of the concentration that had occurred previously. From 1920 through 1935 the traditional dynamism persisted. The provinces that contained the great conurbations increased most rapidly. Outside, growth was generally more rapid in the northeast than in the southwest. Increases in Shizuoka, Hiroshima, Yamaguchi, Fukuoka, and Nagasaki indicated that the factors influencing distribution were shifting.

As war preparations accelerated, redistribution quickened and the geographical pattern shifted. Concentration was accompanied by its natural corollary, depopulation. Intercensal increase between 1935 and 1940 dropped to 3.9 million. Over four-fifths were absorbed in eleven provinces: Aichi, Osaka, and Hyogo among the metropolitan provinces and Yamaguchi, Fukuoka, Hokkaido, Shizuoka, Nagasaki, and Hiroshima, centers of war preparation, mining, heavy industries, and transportation. Thirty-six provinces remained. With 46 per cent of Japan's total population, they had available collectively only 15 per cent of her intercensal increase. Fourteen of the 36 lost in total population. In no case were the losses high, but they were omens of the future if perchance the rapid pace of concentration should continue.

Urbanization

In 1920 Japan had progressed far beyond the agrarian feudalism that the Tokugawa shogunate bequeathed to the planners of the Meiji Restoration, but the country remained essentially rural if considered in global perspective. Over four-fifths of the total population lived in the *gun*, over two-thirds in *machi* and *mura* whose total populations were below 10 thousand. (Table X.2.) From 1920 to 1940 the outstanding characteristic of the Japanese population was urbanization, the growth of the area of concentrated settlement. During this twenty-year period the rural population was relatively unchanging; if defined as the population of the commune of less than 10,000 population, it declined 3 per cent. All the population increase was absorbed in the cities and urban areas, whether through physical movement to the city, the surplus of births over deaths within the cities, or the incorporation of previously rural areas into urban concentrations. Moreover, the rate of increase for the period as a whole was roughly proportionate to the size of the city. Administrative divisions of 10,000 to 50,000 increased one-fourth, those of 50,000 to 100,000 four-fifths, while those of 100,000 and above more than doubled.¹¹

The major shifts in the distribution of the population of Japan were at the peripheries of the distribution of concentration—a continuing decline in the proportion rural, a continuing increase in the proportion in cities of

¹¹If the areas of May 1, 1941, are held constant from 1920 through 1940 to eliminate the influence of the combinations of smaller units and incorporations into the expanding *shi*, the severity of the population shifts is lessened somewhat but the basic phenomenon of urbanization and the differential growth of areas by type and size of population remain unchanged. The population within the areas that were urban on May 1, 1941, increased almost three-fourths between 1920 and 1940, while the population within the areas that were *gun* on this date increased only slightly more than one-eighth. Some two-fifths of the total increase in the population of the cities was associated with the incorporation of areas once rural and the increase in the population of these areas after incorporation. This type of increase in urban population, however, cannot be attributed entirely or even in large part to the artificialities of political and statistical procedure. In so far as incorporation represents the extension of the functional city and the realignment of political structure with economic reality, it represents real rather than spurious urbanization.

100,000 and above. Urbanization appeared as an abrupt phenomenon, a direct transition from peasant village to large city, not a forward push along the wide front of a continuum. It tended to be metropolitanization rather than urbanization. Over 14.5 million of the total increase of 17.2 million in the population of Japan in the interwar decades occurred in the

TABLE X.₂
URBANIZATION IN JAPAN, 1920-1940*

YEAR	POPULATION	AREAS AS OF THE CENSUS DATE		AREAS AS OF MAY 1, 1941		SIZE OF COMMUNES				
		Shi	Gun	Shi	Gun	Under 10,000	10,000-49,999	50,000-99,999	100,000 and above	
Numbers (in thousands)										
1920.....	55,963	10,097	45,866	16,592	39,371	37,927	9,177	2,105	6,754	
1925.....	59,737	12,897	46,840	19,370	40,367	37,884	9,667	3,445	8,741	
1930.....	64,450	15,444	49,006	22,344	42,106	38,158	10,409	4,402	11,481	
1935.....	69,254	22,666	46,588	25,728	43,527	37,502	10,549	3,685	17,518	
1940.....	73,114	27,578	45,537	28,392	44,722	36,627	11,338	3,858	21,291	
Per-Percent Distribution										
1920.....	100	18.0	82.0	29.6	70.4	67.8	16.4	3.8	12.0	
1925.....	100	21.6	78.4	32.4	67.6	63.4	16.2	5.8	14.6	
1930.....	100	24.0	76.0	34.7	65.3	59.2	16.2	6.8	17.8	
1935.....	100	32.7	67.3	37.2	62.8	54.2	15.2	5.3	25.3	
1940.....	100	37.7	62.3	38.8	61.2	50.1	15.5	5.3	29.1	
Per-Percent Change										
1920-25.....	6.7	27.7	2.1	16.7	2.5	-0.1	5.3	63.6	29.4	
1925-30.....	7.9	19.7	4.6	15.4	4.3	0.7	7.6	27.8	31.3	
1930-35.....	7.5	46.8	-4.9	15.1	3.4	-1.7	1.3	-16.2	52.6	
1935-40.....	5.7	21.7	-2.3	10.4	2.7	-2.3	7.5	4.7	21.5	
1920-40.....	30.6	174.9	-0.7	71.1	13.6	-3.4	23.5	83.3	215.2	

*Populations of the *shi* and the *gun* and the distributions by size of commune are given in the general volumes of the censuses as of the respective years. The reallocations for the areas as of May 1, 1941 are from: Reikichi Kojima, *Waga Kuni Saikin no Futen Ojoshi Toshi Jinko, Showa Jugo-nen Kokusai Chasa no Kekka ni Yoru* (Population of the Prefectures and Cities of Japan in Most Recent Times, Based on the Results of the 1940 Census), Toshii Mondai pamphlet, No. 41 (Tokyo, July, 1941, 35 pp.).

cities of 100,000 and over. These cities included 12.0 per cent of the total population in 1920, 14.6 per cent in 1925, 17.8 per cent in 1930, 25.3 per cent in 1935, and 29.1 per cent in 1940. Neither problems of definition nor questionable incorporations of peripheral rural areas can alter appreciably the magnitude of an overpowering directional drift such as this.

The City and the "Industrial" Population

The growth of the urban population was a byproduct of the localization of industries, transportation, and distributive services. Politically there were clear-cut lines; a given area either was or was not incorporated as a

shi; a given administrative area, be it *machi* or *mura*, either did or did not have a population of a given size. Economic differentiations were less precise. The *shi* were urban in the occupational composition of their population. In 1930, for instance, three-fourths of the gainfully occupied males in the cities were in manufacturing industry, commerce, and transportation; less than 4 per cent in agriculture. And, conversely, the *gun* were rural; over half their gainfully occupied males and almost three-quarters of their gainfully occupied females were allocated to agriculture as the major occupation. However, 58 per cent of all males reporting manufacturing industry as their major occupation resided in the *gun* and hence by definition in "rural areas." In fact, the Japan of 1930 was still predominantly rural in the sense that no major category of economic activity was predominantly urban in the residential location of its labor force.

This apparent contradiction between an urbanizing population and an economy the major portion of whose industrial workers were rural becomes more comprehensible upon examination of the occupational composition of the population of the administrative divisions classified by size. As the population of the area increased, the proportion of the population in agriculture declined, the proportion in industry, trade and commerce, and transportation and communication increased. There was an occupational continuum, with no decisive break below which occupational structure was agricultural, above which it was industrial. (Table X.3.) Here, too, the dispersion of industry throughout the countryside is apparent. Areas with total populations of less than 10,000 included almost nine-tenths of the agricultural workers of the country, but they also included almost four-fifths of the workers engaged in manufacturing industry. However, it should be noted that agriculture was overrepresented relative to the total gainfully occupied population of these areas, manufacturing industry underrepresented, for over 62 per cent of all the gainfully occupied population of Japan resided in administrative divisions of less than 10,000 total population.

The critical distinction between urban and rural areas, as between the majority of the small cities and the large metropolitan centers, was not that between agriculture and industry but rather that between the old and the new industry, the handicraft production of the traditional peasant society, and the machine production of the Western technological civilization. It was this latter which was localized in the large cities, the former representing the survival of the feudal past among the peasantry whose low incomes at once necessitated supplementation by nonagricultural production and prohibited sizable purchases of the products of the Western-inspired factories. The industrial population reported in the census included all the people working in the small factory of less than five workers. If these are eliminated, as they are in the factory statistics which include only factories having five or more workers, the picture of industrial composition shifts drastically. Almost one-third of all male factory

TABLE X.3
INDUSTRIAL COMPOSITION OF THE POPULATION BY SIZE OF COMMUNE,
JAPAN 1930*
(PER CENT OF TOTAL GAINFULLY OCCUPIED)

INDUSTRY	TOTAL				MALE			
	Under 10,000	10,000- 49,999	50,000- 99,999	100,000 and over	Under 10,000	10,000- 49,999	50,000- 99,999	100,000 and over
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture.....	68.1	29.9	5.6	2.5	62.7	24.8	4.9	2.2
Fishing.....	2.3	2.2	1.2	0.5	3.5	3.2	1.5	0.6
Mining.....	0.7	3.4	1.9	0.2	1.0	4.4	2.3	0.2
Manufacturing industry.....	12.3	26.5	36.7	35.8	14.4	28.6	37.1	39.8
Trade & commerce..	8.7	21.8	31.1	35.9	8.9	22.5	31.4	35.3
Transportation & communication...	1.8	4.0	6.3	6.3	3.0	5.8	8.3	7.8
Public service & professional.....	4.4	8.2	12.2	12.4	6.1	9.8	13.3	12.7
Service.....	1.5	3.6	4.6	5.7	0.4	0.6	0.8	0.6
Other.....	0.1	0.2	0.4	0.7	0.1	0.3	0.4	0.9

*Minoru Tachi and Masao Ueda, *Demographic Research on the Differences of the Fundamental Population Phenomena by the Size of Community* (Tokyo, 1949). Computed from Table VI.

operatives in all Japan were located in the prefectures of Tokyo and Osaka alone, three-fifths in the metropolitan prefectures containing the Big Six cities and Fukuoka. The remaining two-fifths were concentrated in the cities of 100,000 and more outside these seven prefectures of concentrated economic development.

Living and Working in the Cities

The city has hitherto been considered as an agglomeration of people who were differentiated by age, sex, and broad occupational composition from the remainder of the population. The numerical picture is remarkably similar to that which might have been presented for any Western country undergoing rapid economic transformation from peasant to industrial society. The physical city, however, was far different from the stereotype of the Western metropolis, and the conditions of living and working differed sharply from those in a New York, a Chicago, or a Los Angeles. This was the urbanization of the Asian peasant, not the British yeoman farmer or the New York up-country farmer. As such, it was both a similar and a different process. The educational level was less, the level of the poverty deeper, the transition in theory sharper. Actually, however, the Asian peasant moved to a city that was itself characteristically rural in the conditions of living, working, and playing for large portions of its people. The city scene itself was flat—long, narrow streets of cheaply constructed and densely packed low wooden structures. A few sky-

scrapers, even a subway, indicated the potentialities of Western development when capital should become plentiful enough to permit investment in the amenities of living rather than in production facilities, whether for peace or for war.

Contrasts between the old and the new were omnipresent in the cities. There was the streetcar in the metropolis, but the bicycle was ubiquitous, the automobile rare. The buckets in the houses, the hand-drawn carts laden with containers of human waste, and the urine-laden gutters existed even in the greatest of the cities. The water tap, the communal bath, and the cult of cleanliness combined with the veneration for inoculations and the government's public health and sanitary procedures to permit the survival of concentrations of millions of people under these essentially primitive conditions. The adjustments that permitted survival, though, involved unremitting human labor, particularly of the women, for incomes were low, food limited in variety and often in quantity, and purchase and preparation faced anew each day.

Survival required continuing work for all, men and women. For some age and sex groups that work was reported as such in the census enumerations of the gainfully occupied, for others not. Census statistics reflect the omnipresence of the pressures to secure remunerative employment, if not the extent of the unceasing toil of the people. In the metropolitan cities in 1930 the proportion of males in the labor force was over one-fourth at ages 10 to 14, almost four-fifths at ages 15 to 19, almost nine-tenths at ages 20 to 24. Between the ages of 25 and 50, 95 per cent of all men reported a gainful occupation; at ages 30 to 45 the percentage exceeded 97 per cent. Gainful employment of women was high also: 18 per cent at ages 10 to 14, 54 per cent at ages 20 to 24, 36 per cent at ages 25 to 29. From age 30 through age 54 approximately one in four women reported a gainful occupation, despite the practical universality of marriage during these ages, the traditional role of women as dependent, and the heavy burden of bearing and rearing children in the urban milieu. Older women apparently achieved dependence along with the venerable position of mother-in-law, for only 14 per cent were gainfully occupied at age 60 to 64, only 7 per cent at age 65 and over. For men there was no surcease of toil even in old age; 71 per cent of those aged 60 to 64 and 46 per cent of those aged 65 plus either were gainfully occupied or were seeking gainful employment, for they reported themselves as with occupation and industrial attachment on the census schedules for the year 1930.

A portion of the answer to the high levels of labor-force participation at all ages was the predominance of the household industries and the small shop, for here place of work and place of residence were one. The young, the married women, and the aged could be utilized within the home. Laws for the protection of labor did not deter child employment, for "factories" with fewer than five workers regularly employed were not

subject to the protective laws. Married women could delegate the care of the younger child to the next older child and so free both their own time and that of still older children for remunerative activity. The aged, the ill, and the physically or even the mentally handicapped could work at whatever pace was possible and so contribute something toward their own subsistence and that of their families. True unemployment was masked by the institutionalization of unpaid labor at low productive levels.

The Cityward Movement of the Peasant

The political and economic developments that produced the Japan of the Co-Prosperity Sphere from an Asian peasant population in less than a century created and were created by the movement of peasants into the city. (Table X.4.) It was only this substantial exodus of the native-born that enabled the decline of mortality to coexist with high fertility for decades without leading to intolerable increases in the numbers of people attempting to secure a living from the limited land. And it was this exodus that negated the plans of government; cracked, if it did not shatter, the crust of indoctrination and repression that maintained the ancient values; and slowly altered the family system itself with consequent changes in marital frequency and reproductive behavior. The close integration of individuals in the family itself insured that the impact of the liberating forces of the alien environment, usually urban, were transmitted back in however depleted a form to the area of origin.

Out-migration was a complex function of an evolving social and economic system in which the major economic pressures were in the agricultural areas, the major economic opportunities in the industrial areas. This is not the complete explanation of the exodus of the native-born, though, for almost 2 million of Japan's 10 million provincial out-migrants had left the industrial provinces. Furthermore, the exodus from one agrarian province could constitute influx into another agrarian province. None the less, the major exodus did come from agricultural areas and the major influx did go to industrial and urban provinces.

The proportionate losses of the native-born, whether considered in their entirety or for specific age groups, tended to be greater for the prefectures of mixed agrarian-industrial economy than they did for the more completely agricultural areas. The differences, however, were slight compared with the similarities. The 40 prefectures in which 40 per cent or more of the gainfully occupied were in agriculture had lost approximately one-fourth of their native-born in the ages between 15 and 49, as contrasted to perhaps one twenty-fifth of their children under age 10 and less than one-tenth of their youth aged 10 to 14. The men in the ages of maximum productivity and employability were predominant in the exodus; they constituted some three-fourths of all men resident outside the prefecture of birth. Women in the childbearing ages had also left in approximately equal proportions, however, so that to a

TABLE X.4
EXODUS OF THE NATIVE-BORN, BIRTH TO 1930, BY AGRARIAN-INDUSTRIAL
STATUS OF PREFECTURE OF BIRTH*

AGE	OUT-MIGRANTS PER 100 BORN IN PREFECTURES†						
	Total	Indus- trial A	Indus- trial B	Transi- tional A	Transi- tional B	Agrarian A	Agrarian B
Men							
Total.....	17.3	12.5	14.1	15.5	19.8	18.7	15.2
0-9.....	5.1	8.6	5.8	4.5	4.6	4.2	3.6
10-14.....	9.1	11.7	9.1	8.6	9.3	9.0	6.7
15-19.....	20.7	11.9	16.9	19.0	24.4	22.3	20.7
20-24.....	28.6	16.4	23.1	25.0	32.7	31.3	32.3
25-29.....	28.5	16.6	21.8	26.6	32.0	31.4	31.0
30-39.....	27.3	17.4	20.9	26.2	30.6	30.4	25.2
40-49.....	24.1	16.6	18.5	23.6	27.2	26.2	18.1
50-59.....	19.5	14.7	15.4	19.2	22.1	21.0	12.5
60-69.....	15.9	15.6	12.8	15.3	17.5	17.1	9.5
70-79.....	12.1	15.9	9.9	11.1	12.9	13.1	6.9
80+.....	9.4	13.7	7.8	7.9	10.6	9.7	4.6
Women							
Total.....	15.6	13.3	13.0	14.4	16.9	17.1	13.2
0-9.....	5.1	8.6	5.8	4.5	4.6	4.2	3.6
10-14.....	9.5	12.1	8.8	8.7	9.5	9.9	7.4
15-19.....	19.8	13.2	14.9	18.9	21.0	22.6	23.6
20-24.....	24.2	16.6	19.4	22.9	25.4	27.3	26.7
25-29.....	25.7	18.9	20.7	24.3	27.6	28.5	25.1
30-39.....	23.8	19.0	19.1	23.1	25.6	26.4	19.0
40-49.....	20.4	17.3	16.3	20.4	22.2	22.3	13.4
50-59.....	17.4	16.3	14.6	17.7	19.5	18.3	10.2
60-69.....	15.2	17.0	13.3	15.4	16.6	15.8	8.7
70-79.....	12.5	17.3	10.9	12.4	13.5	12.9	6.8
80+.....	10.9	15.4	10.0	9.8	12.2	10.9	5.3

*The age composition of the native-born and the prefectural out-migrants are given in Table IX in *Nihon, Naikaku tokai-kyoku, Showa gonen Kokusei Chosei Hokokusho* [Reports of the 1930 Census], *Fu-ken Hen* [Prefectural Volumes], 47 vols.

†An out-migrant is a person born in one prefecture and enumerated in another of Japan at the census of Oct. 1, 1930. Prefectures are grouped according to the proportion of gainfully occupied males in agriculture as follows: Industrial A, under 20 per cent; Industrial B, 20 to 39 per cent; Transitional A, 40 to 49 per cent; Transitional B, 50 to 59 per cent; Agrarian A, 60 to 69 per cent; Agrarian B, 70 per cent or more.

large extent migrants had removed from these agrarian prefectures both themselves and the children they were to have later, perhaps had had by the date of the 1930 census, for these, it may be repeated again, are data on present migrant status rather than on present migration.

The exodus of the native-born from the industrial prefectures had four major and partially separable components: the movement of the native-born children of former migrants leaving the industrial areas; the move-

ment of migrants to other industrial areas; the movement of girls to marriage; and the movement of professional, business, commercial, and technical people for service in the provinces. Those who moved to an industrial area remained there for a few or many years, and then returned to the less remunerative but also less complex life of the more agrarian areas were likely to take their city-born children with them. The children of the professional or other groups who left the cities for "urban" occupations in the provinces were also out-migrants, along with their parents. The relative predominance of persons whose status was derived from that of their parents in the total exodus from the industrial provinces was considerable. For Tokyo and Osaka, 35 per cent of all provincial out-migrants were under age 15, 59 per cent age 15 to 59, 6 per cent age 60 or over. In the agrarian provinces of heaviest exodus, only 11 per cent of the out-migrants were under age 15, while 81 per cent were between the ages of 15 and 59 and 7 per cent were age 60 or over. The industrial areas thrust out the young in disproportionate numbers. The exodus of these in the productive span was proportionately less than in the agrarian provinces.

The most intriguing problem here is the hint of a selective occupational migration that brought former peasants in as unskilled laborers and sent technicians and professional people to the internal hinterlands. That this process existed is attested by all Japanese. It is, in fact, implicit in the facts of the national transformation. But on this subject published statistics permit neither empirical description nor controlled deduction.

The exodus of the peasants and the small handicraftsmen from the agrarian areas was an essential aspect of the political and economic transformation that had begun even before the opening to the West and gained momentum after the Meiji Restoration. With rates of exodus as substantial as they were, accumulations of people in the agricultural regions were residual, minor fragments of what they would have been had not the exodus removed youth. Men went and women too, for this was a permanent redistribution process rather than the transitory removal of the unattached male. Even as early as 1930, it was the rural-born migration of a people and a country approaching demographic and economic maturity.

The Influx into the Industrial Areas

The man and woman from elsewhere were the human foundation for the rapid industrial development of Japan. In the most highly industrial provinces from three-fifths to two-thirds of all persons in the productive ages from 20 to 50 were in-migrants from other provinces of Japan; in the other industrial provinces and those moving rapidly toward industrialization the contribution of the migrant to the population in these central ages amounted to one-third of the total. In the agrarian and the agrarian-industrial provinces, on the other hand, in-migrants constituted only 7 to 10 per cent of the population in the major productive

ages. This positive relationship between the prevalence of the migrant and the industrialization of the population structure, between the predominance of young adults and the urbanizing milieu, was the product of an economic transformation that was both rapid and recent. This was population redistribution that might be viewed either as wrenching apart the traditional structure of an ancient and integrated society or as creating the new economic order that utilized what would otherwise have been the excess population of the rural areas under conditions that were conducive to cultural modernization and therefore the transition from high to low fertility. These problems are crucial in any demographic analysis of the impact of rapid industrialization on a densely settled agrarian people. Here we only document the magnitude of the influx of the youth of this Asian nation into areas where economy, culture, and psychological compulsions were in antithesis to those of the life of the villages.

The labor force for industrial economy was recruited in major part from the agrarian regions of the country. If we limit the analysis to men 15 to 60, who in Japan or elsewhere are a group that must not only sustain themselves but establish and maintain families, we find migrants present in greatest numbers in those areas for which their social background and economic training least fitted them. In the agrarian world of the past, as in the advanced industrial societies of present and future, boys spend their years of childhood and adolescence in a milieu somewhat comparable to that in which they will spend their adult lives. In the rural world there is direct participation and training for further participation in the economy which is an activity of the present household and has been an activity of the ancestors as far back as the legends reach. Social adjustment and technical skills presumably evolved in the twenties and thirties much as they had in the distant past; problems existed, but they were economic, social, and political problems of the larger society, somewhat extraneous to the individual's command of the work habits, routines, and requirements. There were economic difficulties in these rural areas, but there were hardly labor problems in the technical sense. In the industrial world of the West today, boys mature in adjustment to the complicated patterns of urban living and they acquire a familiarity with and an acceptance of the machine. In the interstitial society such as that of Japan in 1930 the boy who had developed and matured in adjustment to the one society moved to the other—and in fact was subject to enormous problems of individual adjustment, social retardation, and economic inefficiency. Japan used the youth of her ancient past, culturally and psychologically speaking, and transformed them into the labor force that created an industrial economy, empire, and army.

The economic and cultural assimilation involved in the migration of the Japanese to the metropolitan and industrial provinces was of such magnitude as to make assimilation itself almost an erroneous designation. In the agrarian provinces and those with proportionately small indus-

TABLE X.5

THE INFLUX OF PERSONS BORN ELSEWHERE IN JAPAN, BY AGRARIAN-INDUSTRIAL
STATUS OF PREFECTURE OF RESIDENCE, 1930

AGE	IN-MIGRANTS PER 100 OF THE RESIDENT POPULATION						
	Total	Indus- trial A	Indus- trial B	Transi- tional A	Transi- tional B	Agricul- tural A	Agricul- tural B
Men							
Total.....	17.1	47.3	22.5	22.0	6.9	6.2	5.0
0-9.....	5.0	11.5	7.4	4.5	3.4	2.7	2.5
10-14.....	9.0	28.8	13.3	7.5	4.5	3.9	3.1
15-19.....	20.3	54.8	26.3	16.8	7.4	6.5	5.0
20-24.....	27.8	62.1	34.3	29.4	10.4	10.5	7.5
25-29.....	27.8	64.9	34.5	32.2	10.5	8.8	7.9
30-39.....	26.0	65.2	33.8	36.1	10.3	8.8	7.8
40-49.....	23.9	62.4	30.3	41.3	9.2	8.8	7.5
50-59.....	19.4	56.9	24.6	38.5	7.8	7.5	5.9
60-69.....	15.9	53.1	19.4	34.2	6.6	6.8	5.2
70-79.....	12.1	45.8	14.3	28.1	5.4	5.7	4.6
80+.....	9.4	39.5	11.2	24.2	4.1	4.5	3.8
Women							
Total.....	15.5	44.4	21.5	18.3	7.4	6.5	4.9
0-9.....	5.0	11.5	7.3	4.4	3.4	3.2	2.5
10-14.....	9.4	26.4	14.5	7.4	6.2	5.2	3.3
15-19.....	19.6	51.4	27.9	13.6	10.6	8.2	5.2
20-24.....	24.0	60.3	32.2	20.1	11.0	9.3	6.7
25-29.....	25.5	64.5	33.8	26.6	10.9	9.9	7.8
30-39.....	23.7	63.3	31.6	31.2	10.1	9.2	7.5
40-49.....	20.3	58.6	26.7	35.3	8.6	7.9	6.7
50-59.....	17.4	54.4	22.9	32.5	7.6	7.0	5.6
60-69.....	15.2	52.1	20.1	29.1	6.7	6.3	4.7
70-79.....	12.5	46.6	16.2	25.2	5.6	5.6	4.1
80+.....	10.9	43.8	13.8	22.4	5.0	4.9	3.3

*See Table X. 4 for citation to source of data and explanations.

trialization the migrant was a minority and so assimilation in the ordinary sense could operate. But in the industrial provinces the migrant was a majority, and so assimilation occurred with those to be assimilated outnumbering those who were to assimilate them. (Table X.5.)

The transformations in the geographical distribution and the economic environment were practically as great for women as for men. And the inundation of the native in the industrial centers of the country occurred for girls and women as it did for boys and men. The positions available to the young and the single women in these areas were filled and there was created a reserve labor force for any and all positions consistent with woman's historic status as wife and mother. Moreover, the wife who main-

tained the household and bore her children in the great metropolitan area had as pattern for action and value the experience of her mother and the neighbors a few years earlier in a small town or village. Here the failure to secure a mate was a disgrace to individual and to family. Marriage that involved a socially acceptable adult status did not mean individual development, however, but acquiescence to the wishes and goals of the husband. Babies arrived and status was enhanced, particularly if the babies were male and there were many of them. Midwives were local and well-known; child care was taught by mother-in-law, mother, or neighbors. As a child matured it could assist in the care of succeeding children—and if babies died, that, too, was one of the burdens that life imposed. This was the life the girl knew—but now, married and living in the great city, the simple reproductive patterns of the village would have produced economic and even psychological maladjustments. This was no subsistence economy but instead a directly pecuniary one, and each additional mouth meant eventually a roughly proportionate increase in expenditures. Limited space and city streets compounded the physical problems of child care, while economic return for child labor was long postponed. The ambition of the husband, the comparison of levels of living that induced both striving and discontent, and the other components of urbanization of an industrial type also entered. These adjustment problems, more serious for women than for men because of woman's traditional domestic immobilization, were not "social problems" of a minority of the population of the industrial areas but rather the day-to-day compulsions that transformed the behavior of the former peasant girls of the rural provinces who became the numerical majority of the young married women of the industrial provinces.

The magnitude of the individual and family transformations involved in this peopling of the industrial regions with provincial natives is difficult to estimate in the absence of more detailed knowledge of the life histories of the migrants. Even if we eliminate the interprefectural migration of the native-born as between the industrial regions, the true provincials remain large. For some large but unknown proportion the transition from ancient to modern life was lessened by birth or intermediate residence in a town or a smaller city. For a fortunate few education beyond the compulsory six years of elementary school provided additional skills and a more sophisticated knowledge of the prerequisites of successful living in the urban world. Even if allowances are made for all minimizing factors, however, the creation of the great industrial regions of Japan through the internal movement of the Japanese was a gigantic experiment in the social pliability of the individual. The social psychological studies that might have made possible an interpretation of the consequences of this cultural-geographical transfer for individual, city, and nation are lacking, except as they are measured indirectly in the changing incidence of family formation, marriage, and childbearing.

In that Japan of 1930 the migrants were less predominant among the mature adults and the aged than among the young and those in the prime of productive life. This was probably a somewhat transitory condition, though, for as the younger age groups matured and migration slowed, the predominance of the migrant would increase in the older groups, decrease in the ages of young adulthood, and thus bring an approach to an evenness of distribution throughout the life span. If the industrial areas became demographically mature and produced youth sufficient to meet their own labor needs, migrants might come to predominate in the older age groups while youth were native.

The future in which interprovincial migration would serve predominantly to redistribute the natural increase of a uniformly developed economy with generally low fertility was remote indeed in the Japan of 1930. However, the beginnings of this process of the normalization of industrial structure through an alteration in the patterns of migration and a lessened role of migration could already be perceived. Women were already virtually as numerous as men among the interprovincial migrants. Men still predominated, but the degree of the predominance was minimal as contrasted to that in such areas as Kwantung or Manchoukuo. The adjustments required by migration might be severe, but they were predominantly the shared adjustments of family groups rather than the disruptive wrench of single men in the industrial areas, single women in the agrarian areas, or married men in industrial areas with wives and children at home.

The normalization process appeared most clearly in the high predominance of the native-born among children. The major industrial areas with over three-fifths of their adults in the productive span from 20 to 60 in the status of migrant had only slightly over one-tenth migrant among children under 10. This is not to minimize the role of the migrant, but rather to accentuate it. If we assume that most migrants marry at the usual ages for the areas in which they live and bear children at no higher rates than the total populations of the area of residence, they must have contributed at least half of that 89 per cent of the children under 10 who were native-born. Migrants came as individuals, but they contributed their children as the indigenous population of the area. Social problems and adjustment difficulties were involved here, too, but they were in theory less acute for the children of the migrant than for the migrant himself. And with the continuation of the utilization of migrants the native-born supply of labor to which the migrant himself had contributed abundantly became increasingly adequate to meet the needs of labor maintenance and labor expansion. The settled migrant thus created the biological replacement that would lessen and eventually terminate the need for the drastic adjustment involved in the rural-urban, agrarian-industrial transformation.

The Balance of Movements

Exodus and influx have thus far been considered as separate movements. This was a fruitful procedure analytically, for it enabled us to discern the forces impelling the various types of movements, to measure the magnitude and the structure of the currents, and to consider their consequences for individual, community, and larger society, albeit in speculative terms. The whole procedure is somewhat synthetic, however, for each out-migrant was also an in-migrant and each social group of whatever degree of formality or informality was influenced both by the people who once formed a part of it but no longer did so and by the people from elsewhere who now functioned within it. The changing balance of people, labor force, subsistence, and employment opportunities was achieved by redistribution rather than by influx or exodus considered separately.

On October 1, 1930, the census personnel found people from each prefecture outside its borders, and they found within each prefecture people who had been born elsewhere. The difference between these two groups was the net gain or loss through the interchange. Net changes for the total population ranged widely; for men, Tokyo's net gain by migration amounted to 44 per cent of its resident population, but Toyama's net loss amounted to 34 per cent of her resident population. Between these extremes there was a clustering rather than a continuum, industrial prefectures gaining substantially, agrarian prefectures within the demographic watersheds of these industrial prefectures losing heavily.

The net interchange as reflected in the migrant status of the population on October 1, 1930, was a measure of the magnitude of the transformation of the Japanese economy in the decades following the opening to the West and the Restoration. (Table X.6.) This was internal redistribution that permitted the utilization of the children of the peasantry in the development of the industrial economy. The economic factor was predominant in the creation of the migration that was the human basis for metropolitan concentrations. Within this economic matrix, however, there were many possibilities of individual selectivity that would yield the number of migrants that were actually involved in the crossing currents. The specific selectivity that did operate in exodus, influx, and hence in net change arose from social and psychological factors deeply imbedded in the traditional institutional structure of Japanese society. The family system, evolved through the centuries of feudalism on the basis of institutions that antedated the feudal structure itself, was maintained into the modern period, its rights and responsibilities formalized and sanctioned by Imperial Rescript and codified law. This was the system whose functioning within an industrializing economy permitted capital formation, labor force, social security, and political stability in Imperial Japan. The selection of the migrant and the reception of the return migrant were aspects of this interpenetration of the most ancient of the social institutions and the most advanced of the economic developments.

TABLE X.6

NET BALANCE OF INTERPREFECTURAL MIGRATION OF THE JAPAN-BORN POPULATION
BY AGRARIAN-INDUSTRIAL STATUS OF THE PREFECTURE OF RESIDENCE, 1930*

Age	PER 100 RESIDENT POPULATION					
	Industrial A	Industrial B	Transi- tional A	Transi- tional B	Agrarian A	Agrarian B
Men						
Total.....	41.2	10.4	8.1	-16.1	-15.3	-11.9
0-9.....	3.4	1.8	0.0	- 1.2	- 1.5	- 1.1
10-14.....	20.1	4.9	-1.1	- 5.3	- 5.5	- 3.8
15-19.....	51.1	12.2	-2.4	-22.4	-20.2	-19.8
20-24.....	58.5	16.6	6.9	-33.0	-29.0	-36.5
25-29.....	61.2	18.2	8.9	-31.4	-32.7	-33.5
30-39.....	60.4	17.8	14.6	-29.0	-29.7	-23.2
40-49.....	56.0	15.0	23.7	-24.6	-23.5	-12.8
50-59.....	49.7	11.1	24.0	-18.4	-17.0	- 7.5
60-69.....	44.6	7.6	22.3	-13.2	-12.4	- 4.7
70-79.....	35.7	4.8	19.1	- 8.6	- 8.4	- 2.4
80+.....	30.1	3.6	17.7	- 7.2	- 5.8	- 0.9
Women						
Total.....	36.5	10.1	4.8	-11.4	-12.7	- 9.5
0-9.....	3.4	1.7	-0.0	- 1.2	- 1.1	- 1.1
10-14.....	16.8	6.5	-1.3	- 4.0	- 5.2	- 4.5
15-19.....	45.1	15.9	-6.2	-13.1	-18.7	-24.0
20-24.....	58.1	16.6	-3.4	-19.3	-24.7	-27.2
25-29.....	57.3	17.1	3.4	-22.8	-25.9	-23.2
30-39.....	55.5	15.9	10.6	-20.8	-23.4	-14.1
40-49.....	50.3	12.6	18.9	-17.5	-18.5	- 7.8
50-59.....	45.9	9.7	18.0	-14.8	-13.8	- 5.1
60-69.....	42.4	7.9	16.2	-11.8	-11.2	- 4.4
70-79.....	35.7	5.9	14.6	- 9.1	- 8.4	- 3.0
80+.....	33.6	4.1	14.0	- 8.2	- 6.7	- 2.1

*Citation to sources of data and explanations, Table X. 4.

Manpower in the Productive Ages

In the 20 years between 1920 and 1940 over 10 million adults were added to the population of Japan. Each year five to six hundred thousand additional persons had either to find employment in a land already crowded or to be supported by those who did find such employment. Youth, workers in their prime, the aging, and the aged were all increasing in number. (Table X.7.) This demographic fact set the outer margin of the economic problem. If Japan had had a stationary economy, population increase and diminishing returns would have created a precipitant decline in levels of living that might have justified even militarism and the resort to war on grounds humanitarian from the Japanese standpoint.

TABLE X.7
INCREASE IN THE POPULATION OF JAPAN, 1920-1940
(NUMBER IN THOUSANDS)

AGE	NUMBER					INCREASE, 1920-1940	
	1920	1925	1930	1935	1940	Amount	Per Cent
Total							
Total.....	55,963	59,737	64,450	69,254	73,075	17,112	30.6
0-14.....	20,416	21,924	23,579	25,545	26,369	5,953	29.2
15-64.....	32,605	34,792	37,807	40,484	43,252	10,647	32.6
15-19.....	5,419	5,885	6,540	6,641	7,409	1,990	36.7
20-44.....	18,797	19,841	21,452	23,396	24,961	6,164	32.8
45-64.....	8,389	9,065	9,815	10,447	10,881	2,492	29.7
65 and over.....	2,911	3,021	3,064	3,225	3,454	513	17.4
Men							
Total.....	28,044	30,013	32,390	34,734	36,541	8,497	30.3
0-14.....	10,309	11,063	11,895	12,894	13,326	3,017	29.3
15-64.....	16,433	17,631	19,177	20,466	21,753	5,320	32.4
15-19.....	2,749	2,988	3,319	3,351	3,717	968	35.2
20-44.....	9,506	10,114	11,016	11,948	12,640	3,134	33.0
45-64.....	4,178	4,499	4,842	5,167	5,396	1,218	29.2
65 and over.....	1,302	1,319	1,319	1,374	1,461	159	12.2
Women							
Total.....	27,919	29,724	32,060	34,520	36,535	8,616	30.9
0-14.....	10,107	10,861	11,684	12,651	13,043	2,936	29.1
15-64.....	16,173	17,161	18,630	20,018	21,498	5,325	32.9
15-19.....	2,670	2,897	3,221	3,290	3,692	1,022	38.3
20-44.....	9,291	9,697	10,436	11,448	12,321	3,030	32.6
45-64.....	4,211	4,567	4,973	5,280	5,485	1,274	30.2
65 and over.....	1,639	1,702	1,745	1,851	1,992	353	21.5

SOURCE: Censuses of the respective year.

Increase in population is not equivalent to increase in the labor force, however, and the economy, far from being stationary, was expanding at a rate seldom paralleled and never surpassed except by the Soviet Union and Israel.

The potential threat to the traditional economic and social structure implicit in population growth of the magnitude of that occurring in Japan is more easily comprehended if the complex realities of the evolving work-a-day life of some 50 to 70 million people are simplified, albeit somewhat arbitrarily. Four limiting assumptions will be made. First, the labor force consists solely of men. Second, each man enters the labor force

at age 15 and remains in it continuously until death or retirement at age 65. Third, there is no escape from this participation through military service or emigration, for on October 1, 1920, all Empire nationals and aliens were expelled from Japan and the Home Islands were sealed more effectively than they were throughout the centuries of Tokugawa control. Within this stable and isolated universe births and deaths occur at the age-specific rates which characterized the actual population of Japan from 1920 to 1940. Fourth, the economy is stationary, the number of jobs is fixed, and no job is relinquished except for demographic cause, i.e., death or retirement at age 65. Japan's population problem and her economic problem thus become by definition the increase of her manpower between the ages of 15 and 64, for adjustment techniques, whether economic or demographic, are ruled out. Under these assumptions there would have been 180 Japanese entering the labor force at age 15 to compete for each 100 jobs that had been left vacant by the death or retirement of other and generally older workers. One hundred of these potential entrants would be utilized; eighty would find no place within this completely occupied and absolutely stationary economy. The demographically unemployable would be four-fifths as numerous as the demographically employable. Forty-five per cent of the annual increment to the number of men in the productive ages would be surplus.

One hundred and eighty men competing for each 100 jobs left vacant by death or retirement, an increase of 277,000 job claimants each year in the twenties, 312,000 each year in the thirties—given the validity of the assumptions underlying the computations, this would indeed be the measure of the depth of Japan's demographic difficulties. It is, in fact, merely the demographic framework within which the real evolution of the male labor force proceeded. And as the limitations imposed on the theoretical development of manpower dynamics are removed, the seeming simplicity of the relationship of population increase to labor supply and labor utilization vanishes. The relationships between numbers, economic development, and politico-economic factors become so intricate as to be measurable only by crude approximations. The fundamental transition in Japan was the growth of the nonagricultural segment of the economy.

The Gainfully Occupied Population

In 1920, almost two-thirds of the total population aged ten and above was reported as having a gainful occupation. (Table X.8.) This high total participation is in part an artifact of the statistical system and the culture it reflects. Concepts of gainful employment and of labor force have evolved in the commercial economies of the West where the fact of gainful employment could be ascertained if the census questions and the instructions were carefully drawn. The situation is quite different in subsistence or largely subsistence economies where specialization of activity is in process of development and where all, men and women, young and old,

work together in family or group activities. Household industries foster this total participation, as does a distribution system that combines sale, manufacturing, and household residence. In agriculture separation of labor-force categories approaches statistical insolubility. In theory the concept of unpaid family labor is applicable, but one suspects that it could be explained only with considerable difficulty to peasants following the productive imperatives and the ancient rituals of the changing seasons in Asia's rice lands. Work is the accepted routine of the passing days. Hours of labor are determined by the work that needs to be done; leisure is natural and an interlude rather than a chosen period of relaxation. People who can work do so. There is little unemployment to contrast with employment, for if a job for wages vanishes there is labor on the land or in the household activities of relatives.

The occupational-industrial statistics of Japan are the records of manpower utilization of an economy and a social system in comprehensive transition. Japan was of the East, and her culture reflected many of the historic attributes of that Eastern subsistence agriculture from whence she was departing rapidly during the seventy-five years from the Meiji Restoration of 1868 to the Surrender of 1945. The pecuniary economy was replacing the subsistence economy, however, and with that succession gainful occupations and employment became ascertainable. In strict fact, this economic transition vitiates the comparability of the statistics on the gainfully occupied population from one census date to the next. There is no technique that can be used to determine whether a given shift reflects changes in the utilization of manpower, changes in the reporting of an unchanging utilization, or a combination of the two. Both changing utilization and changing reporting characterized the period of the enumerative census of 1920, 1930, and 1940, and the two were related to each other. The shift away from agriculture was changing utilization—but that shift altered the nexus of attitudes within which reporting occurred and so shifted the reporting patterns. Furthermore, that utilization that is not reported as gainful employment may have a social and demographic relevance that differs somewhat from the utilization that is reported as gainful employment.

The net impact of the transformation of the Japanese economic and social system in the decades of rapid industrialization was a decline in the per cent of the total population aged 10 and above reported as gainfully occupied: 65.5 in 1920, 62.1 in 1930, and 62.0 in 1940. This slight over-all decline is the result of divergent trends in age groups. With advancing education and the substitution of nonagricultural for agricultural employment, the proportion of youth aged 10 to 14 utilized in the labor force declined rapidly, from 22.9 in 1920 to 15.8 in 1930, and 11.0 in 1940. The proportions utilized among adults changed less radically over time; there was a characteristic pattern of utilization by age that persisted throughout the period. The percentage in the labor force was over 70

TABLE X.8
THE GAINFULLY OCCUPIED POPULATION OF JAPAN, 1920-40*

AGE	NUMBER IN THOUSANDS			PER CENT GAINFULLY OCCUPIED		
	1920	1930	1940	1920	1930	1940
Total						
Total	27,261	29,620	34,177	65.5	62.1	62.0
10-14	1,395	1,072	927	22.9	15.8	11.0
15-19	3,958	4,595	5,333	73.0	70.3	72.0
20-24	3,522	4,048	4,622	76.4	73.2	75.7
25-29	3,008	3,499	4,045	76.7	72.4	71.6
30-34	2,795	3,129	3,629	77.4	74.3	73.4
35-39	2,656	2,722	3,351	77.9	75.9	75.8
40-44	2,547	2,513	2,978	78.5	76.5	77.7
45-49	2,077	2,295	2,513	78.1	75.3	78.4
50-54	1,693	2,065	2,205	75.8	72.9	76.4
55-59	1,321	1,508	1,809	71.8	68.0	70.7
60 and above	2,289	2,174	2,764	49.8	45.4	48.6
Men						
Total	16,987	19,030	21,421	81.6	79.5	78.0
10-14	637	483	428	20.6	14.1	10.1
15-19	2,296	2,605	2,893	83.5	78.5	77.8
20-24	2,171	2,585	2,839	93.7	91.8	92.9
25-29	1,950	2,399	2,749	97.1	96.7	96.9
30-34	1,797	2,131	2,453	98.0	98.0	97.8
35-39	1,677	1,823	2,217	98.2	98.2	98.1
40-44	1,610	1,652	1,937	98.2	97.9	98.0
45-49	1,312	1,479	1,607	97.9	97.0	97.4
50-54	1,087	1,344	1,391	96.9	95.3	95.5
55-59	863	998	1,126	94.6	91.9	90.7
60 and above	1,586	1,531	1,781	75.3	71.6	70.9
Women						
Total	10,274	10,590	12,756	49.3	44.6	46.1
10-14	758	589	499	25.2	17.5	12.0
15-19	1,662	1,990	2,440	62.2	61.8	66.1
20-24	1,351	1,463	1,782	58.9	53.9	58.5
25-29	1,059	1,100	1,296	55.3	46.7	46.0
30-34	997	998	1,176	56.2	48.9	48.2
35-39	979	899	1,134	57.5	52.0	52.5
40-44	937	861	1,041	58.4	53.9	56.1
45-49	765	816	907	58.0	53.6	58.2
50-54	606	721	815	54.5	50.8	56.9
55-59	458	510	684	49.3	45.1	51.9
60 and above	703	643	983	28.2	24.3	31.0

lations and gainfully occupied by age and sex from the general volumes of the decennial censuses, 1920, 1930, 1940. There was some reallocation for comparability in the definition of the gainfully occupied as between 1920 and 1930. Armed forces are included in 1920 and 1930 if inside Japan; in 1940 all armed forces are included, regardless of location assigned on the basis of the last civilian employment.

per cent at age 15, increased to 77 or 78 per cent as middle age was approached, declined slowly during middle age, and dropped below 50 per cent in old age. Changes from one census period to another are somewhat irregular, for manpower utilization is a sensitive barometer of business activity, war preparations, educational advance, and the changing role of women.

Generalization of the detailed changes from age to age and from census to census reveals much of the characteristics of the interaction between population and labor-force dynamics. In Japan a high proportion of the people are reported as gainfully occupied. In 1920 the proportion occupied approached an Eastern pattern, with heavy utilization of youth and the aged superimposed on almost complete utilization of men in the ages normally regarded as the productive span in Western countries. Between 1920 and 1940 the general directional drift of the broad pattern of age utilization was the same as that followed by the countries of the West: the prolongation of the period of youth with a consequent advance of the age at which entrance into formal employment occurred, and, to a lesser extent, the rejection of the aged for whom pecuniary economies have few provisions of gainful employment that can replace the less strenuous activities that absorb the old in peasant and village society.

Major clarification of the conflicting trends in the proportion of the population gainfully occupied at the various ages at the three census dates emerges if labor-force participation is considered separately for men and women. In Japan, as in the countries of the West and those of the East for whom statistics are available, practically all men physically able to do so seek employment throughout the long span of productive life. From age 30 to age 45, 98 per cent of all men were utilized in the labor force, 2 per cent apparently representing the minimum of the unutilizable and the relatively small groups freed from the necessity of remunerative employment. Movement occurred in the peripheries of productive life. The proportion of the total number of boys aged 10 to 14 absorbed into the labor force, whether as civilians or military, was less than half as great in 1940 as it had been 20 years earlier; the proportion of those aged 15 to 19 was 6.8 per cent less. Slight and individually insignificant declines characterized each age group from 20 through 54. Beginning about age 55, physical infirmities and the pressures of the economic system forced frequent withdrawals from the labor force as the transition from an agricultural to an industrial base accelerated. Proportions aged 55 to 59 gainfully occupied in 1940 were 4.1 per cent less than in 1920, while the proportions for those aged 60 and above were 5.8 per cent less.

The preceding discussion has concerned total utilization, whether as civilian or as military. Proportionate civilian utilization in the ages from 20 to 29 reflected the procedure of the military services in utilizing sizable contingents of their reserves and the census practices in differentiating between civilian and military utilization. In 1920 and 1930 there was a

gash in civilian utilization at ages 20 to 24. In 1940 this gash began earlier and was prolonged upward. Proportionate utilization had declined below the 1920 level by 8.7 per cent at ages 15 to 19, 33.1 per cent at ages 20 to 24, and 12.8 per cent at ages 25 to 29.

The proportion of women gainfully occupied reflects both the transforming economy and the position of women within the economic and social structure. In agriculture, where practically all except the physically incapacitated work in the fields during the planting and the harvesting seasons, the question of the allocation of women as gainfully occupied or not becomes a question of social values. A large proportion of all women reported as gainfully occupied were engaged in agriculture and, on a provincial basis, the proportion of women aged 10 and above reported as gainfully occupied was related to the predominance of agriculture in the industrial structure. However, in 1920 almost half of Japan's girls and women aged 10 and above were reported as gainfully occupied. One fourth of the girls aged 10 to 14 and three-fifths of those aged 15 to 19 were gainfully occupied. Participation rates declined slightly for women in their twenties, the period of maximum childbearing, then increased to 58 per cent at age 45 to 49, declined to 54 per cent at ages 50 to 54 and 49 per cent at ages 55 to 59, then tumbled to only slightly over one-fourth of the total number at ages 60 and above.

Trends in the proportions occupied between 1920 and 1940 mirror both the economic crisis of the early thirties and the military preparations of the late thirties. Women were pushed from the labor market with depression; total participation of those aged 10 and over dropped from 49.3 in 1920 to 44.6 in 1930. Lessened participation was particularly noticeable in the younger and the older ages. Between 1930 and 1940 participation rates increased for girls aged 15 to 24, remained relatively unchanged through the period of maximum childbearing, roughly ages 25 to 39, and then rose for women aged 40 and above. The net result of these changes of depression and prosperity, however, was a participation of women in the labor force in 1940 proportionately less than it had been 20 years earlier. The proportionate contribution of girls aged 10 to 14 had been more than cut in half, but participation at ages 15 to 19 had increased slightly. Participation was down throughout the reproductive period, but up at ages 50 and above.

The balance of the trends in the participation of men and women in the civilian labor force was a masculinization of the labor force in the period of depression, a feminization in periods of prosperity and armament. The number of men per 100 women among the total gainfully occupied, civilian and military, was 165 in 1920, 180 in 1930, and 170 in 1940. But for civilians only, the ratio of men to women was 163 in 1920, 177 in 1930, and 155 in 1940. The gainfully occupied in the youngest ages were always predominantly female. The excess of men over women was substantial at ages 15 to 19 in 1920, but declined consistently through

depression as girls entered the labor market. The earlier labor force at ages 20 to 24 was heavily male, but by 1940 women outnumbered men. Two forces had combined to achieve this result: the one, the heavy withdrawal of men for the armed services and the substitution of men in other ages for traditionally male employments; the other, part cause and part consequence, the advancing age at marriage for women with a corresponding longer tenure in gainful employment.

These prosaic participation rates by age and sex groups and their changes over time have been presented at considerable length because they document with such clarity an essentially Western type of change by age and sex permeating this Asian culture where presumably never-ending and unremitting toil is the lot of all, young and old, men and women. The possibility that this may be a valid picture of the daily activities of Japan's people is not denied by the occupational and industrial statistics collected by the Cabinet Bureau of Statistics, for remuneration rather than the fact of toil may be the dynamic element. Three points, however, are conclusively demonstrated. The one is that the people of an Asian culture whose women occupy in theory a completely subordinate and domestic role admit in fact that almost half these women aged ten and above, married as well as single, contribute to the financial maintenance of their households through activities regarded as remunerative. The second is that the rate of utilization of the very young, or the admission of the utilization of the very young, was approximately halved within a brief period of 20 years. The third point, fundamental in both analysis and projection, is that the plethora of individual decisions and actions which followed the involvement of an Asian people in the industrialization process created a labor force whose structure and whose dynamics are comprehensible in terms of Western experience. The economic solutions to reasonably comparable economic stimuli were similar, and thus the stage was set for the evolution of comparable changes in the marriage patterns, familial values, living pressures, the role of women, and ultimately the proportion of total physical energy and financial outgo that should be devoted to the production of the new generation rather than to the enhancement of the levels of living for the present generation.

Changing Numbers in the Labor Force

The fact of most immediate import to the Japanese economy is neither the potential labor force that would have existed if events that did happen had not happened nor the proportionate selectivity of those who did engage in remunerative activity as distinct from those who did not do so. It is, rather, the number and the characteristics of those who constituted the gainfully occupied. These are the people who manned the economy. The percentage increases by age and sex are presented in Table X.9; the numbers themselves have already been presented in Table X.8. In these two brief tables are summarized the many and often conflicting forces that

influenced the structure and the dynamics of manpower utilization in Japan. Over one and one-half million Japanese have been removed from Japan Proper; almost 850,000 Empire Nationals have been added. Armed services have been built up to a strength of almost 1.5 million. All children are attending elementary school; an increasing number of them are entering middle schools or receiving the technical training demanded by advancing industry and preparations for technological warfare. The manifold stimuli and pressures are postponing the age of marriage—and the girls who enter employment at later years than they once did remain in it for longer periods. The result of all these factors is a labor force that expands in some age and sex groups, contracts in others. A population increasing without war or catastrophe has produced symmetrical age structure at successive periods of time. There are regular patterns of change from one period to another. The increases in men and women of the same ages are roughly equal; in each sex the increase was greatest in the youngest group and decreased progressively with advancing age. The emigration of Japanese and the immigration of Koreans had disturbed this symmetry somewhat but had not destroyed it. The labor force recruited from this generally symmetrical population reflects primarily the kaleidoscopic economic changes of depression and prosperity, peace and war, rather than the underlying demographic changes.

Yet demographic changes underlay all these varied transformations in the labor force available for utilization and the numbers actually utilized. Population aged 15 to 60 had increased one-third in 20 years, despite the heavy exodus of Japanese. (Table X.9.) Total labor force in these age groups had increased more than one-third, but civilian labor force had increased less than one-fourth. For men, the population increase had been less than one-third, the total labor force increase 30 per cent, the civilian labor force increase 21 per cent. The very young and the aged men had increased as rapidly in the civilian labor force as in the total population from which they were recruited. Only young men in their prime, those aged 20 to 34, had been removed in substantial numbers from the civilian labor force in Japan Proper.

Superficially the changing patterns of manpower utilization in Japan represented an adjustment of population to employment potentialities, or, conversely, of employment to population. Here appeared to be a solution to the difficult problem of absorbing the increasing manpower of the industrializing state. However, omens of the future lie in even casual computations as to what the situation would have been had military service and Empire expansion not existed as alternatives to internal absorption. Profound questioning of the "solution" as achieved during the thirties might have been expected to arise among the Japanese prior to the logical termination of their process of manpower adjustment in war and defeat, but it does not appear to have done so.

TABLE X.9
PERCENTAGE CHANGE IN POPULATION AND LABOR FORCE CATEGORIES
BY AGE, 1920-40*

Age	INCREASE IN POPULATION			CHANGE IN TOTAL GAINFULLY OCCUPIED			CHANGE IN CIVILIAN GAINFULLY OCCUPIED			CHANGE IN POPULATION NOT GAINFULLY OCCUPIED		
	1920-1930	1930-1940	1920-1940	1920-1930	1930-1940	1920-1940	1920-1930	1930-1940	1920-1940	1920-1930	1930-1940	1920-1940
Men												
Total.....	15.5	12.8	30.3	12.0	12.6	26.1	12.3	5.0	17.9	20.8	13.2	36.7
0-9.....	17.2	7.4	25.8	—	—	—	—	—	—	17.2	7.4	25.8
10-14.....	11.3	23.4	37.3	-24.2	-11.5	-32.9	-24.2	-11.8	-33.1	20.5	29.2	55.8
15-19.....	20.7	12.0	35.2	13.4	11.1	26.0	13.3	9.0	23.5	57.7	15.4	82.0
20-24.....	21.5	8.6	32.0	19.1	9.8	30.8	21.5	-27.3	-11.6	58.1	-5.2	49.8
25-29.....	23.5	14.4	41.3	23.0	14.6	41.0	23.2	0.0	23.2	38.9	8.6	50.9
30-34.....	18.6	15.3	36.8	18.6	15.1	36.5	18.8	11.4	32.4	21.9	22.7	40.6
35-39.....	8.7	21.7	32.4	8.7	21.6	32.2	8.8	20.2	30.8	10.4	29.4	42.9
40-44.....	2.9	17.1	20.5	2.6	17.2	20.3	2.6	16.6	19.6	19.6	11.1	32.9
45-49.....	13.8	8.2	23.1	12.7	8.6	22.4	12.7	8.2	21.9	63.5	-6.5	52.8
50-54.....	25.7	3.2	29.8	23.6	3.5	27.9	23.6	3.1	27.5	90.9	-1.5	88.1
55-59.....	19.1	14.2	36.0	15.7	12.8	30.5	15.7	12.7	30.4	79.0	30.7	133.9
60 and above	1.6	17.4	19.3	-3.5	16.3	12.3	-3.5	16.3	12.2	17.1	20.1	40.6
Women												
Total.....	14.8	14.0	30.9	3.1	20.5	24.2	3.1	20.4	24.1	21.7	10.7	34.8
0-9.....	17.3	6.7	25.1	—	—	—	—	—	—	17.3	6.7	25.1
10-14.....	11.7	23.8	38.2	-22.3	-15.3	-34.1	-22.3	-15.3	-34.2	23.1	32.1	62.6
15-19.....	20.6	14.6	38.3	19.8	22.6	46.8	19.8	22.6	46.8	22.1	1.7	24.2
20-24.....	18.5	12.2	32.9	8.3	21.8	31.9	8.3	21.7	31.8	33.1	0.9	34.2
25-29.....	22.9	19.6	47.0	3.9	17.8	22.4	3.9	17.7	22.3	46.4	21.1	77.3
30-34.....	14.8	19.7	37.4	0.1	17.8	17.9	0.1	17.8	17.9	33.7	21.4	62.3
35-39.....	1.5	25.1	27.0	-8.2	26.2	15.8	-8.2	26.1	15.8	14.5	24.0	42.0
40-44.....	-0.3	16.2	15.8	-8.1	20.9	11.2	-8.1	20.9	11.1	10.5	10.7	22.4
45-49.....	15.4	2.4	18.2	6.7	11.1	18.5	6.7	11.2	18.6	27.4	-7.7	17.7
50-54.....	27.6	0.7	28.6	19.1	13.0	34.5	19.1	12.9	34.4	38.0	-11.9	21.6
55-59.....	21.9	16.6	42.1	11.4	34.1	49.4	11.4	34.1	49.4	32.1	2.3	35.0
60 and above	6.2	19.8	27.3	-8.5	52.9	39.0	-8.5	52.0	39.8	12.0	9.2	22.3

*Citations to sources and explanations, Table X.8.

The Industrial Composition of the Gainfully Occupied Population

The economic development of Japan in the last decades of peace may be characterized simply as industrialization, including under that broad term the expansion of manufacturing industry and all the facilities and services necessarily associated with it, as well as the increasing efficiency and productivity of primary production that accompanied advances in techniques and facilities for production and distribution. The human aspect of this industrialization was the changing industrial allocation of the labor force. Agriculture, forestry, and fishing declined in relative importance; manufacturing, commerce, transportation, and communication increased. Basically, this meant the maintenance of a relatively unchanging population in agriculture, the rapid increase in both the numbers and the proportion of

the people who secured their livelihoods from sources other than agriculture. Agriculture remained the major source of support for the population. However, in 1920 it absorbed slightly more than half the total labor force, in 1930 slightly less than half, in 1940 42.6 per cent. (Table X.10.) This is an understatement of the economic transformation, for as early as 1920 46.3 per cent of the male labor force was engaged in agriculture as a primary occupation; in 1930 the percentage had shrunk to 41.2; in 1940, with the military services and war industries competing, agriculture absorbed one-third of Japan's male labor force.

The female labor force was more agricultural than the male; over 60 per cent of all gainfully employed women were in agriculture in both 1920 and 1930, 57 per cent in 1940. Between 1930 and 1940 the total gainfully occupied population in agriculture declined 286,000, but this was the net result of a decrease of 1.1 million in the number of men, an increase of 827,000 in the number of women.

The changing utilization of women outside agriculture reflected both the modernization of the concepts of suitable occupations for women and the changing technologies of industry. The number of women in mining, always small, decreased substantially. With the collapse of the textile industry and the economic depression the number of women in manufacturing and in transportation decreased between 1920 and 1930, but with full utilization and labor shortages women regained their position, even increasing their numbers in those industries between 1930 and 1940. The largest increases occurred in commerce, however; 846,000 more women were occupied in 1940 than in 1930. It was during these decades of economic development and manpower shortages that women secured their position in government service and the professions; 85,000 were occupied after World War I, 372,000 at the beginning of World War II. Women had diversified the activities in which they participated, and some few had entered the prestige occupations at responsible levels of function, but in general they remained proportionately overrepresented in the menial and the poorly paid occupations. Women constituted a labor reserve, a source of replacements for men in the lower echelons of the industrial and occupational hierarchy. The interplay of traditional familialism, economic pressures, and the exigencies of the political system in determining their economic role and the relationship of this role to age at marriage and the frequency of reproduction performance will not be discussed here. It should be noted, however, that the entrance of women into the labor force and the pattern of their utilization within the Asian social setting is similar to that which occurred in Western society. The transition from peasant to industrial society is not sex-limited, and it seems to evolve characteristic patterns of change which are broadly similar despite differences in the physical aspects, the institutions, and the values of the original peasant cultures.

The transformation of economic structure and social milieu during

TABLE X.10
THE UTILIZATION OF THE POPULATION, INDUSTRIAL CLASSIFICATION OF THE
GAINFULLY OCCUPIED, 1920, 1930, AND 1940*

STATUS	TOTAL POPULATION			MEN			WOMEN		
	1920	1930	1940	1920	1930	1940	1920	1930	1940
Number (In thousands)									
Total.....	55,963	64,450	73,114	28,044	32,390	36,566	27,919	32,060	36,548
Armed forces†.....	250	243	1,694	250	243	1,694	.....	.....	*.....
Civilian population.....	55,713	64,207	71,420	27,794	32,147	34,872	27,919	32,060	36,548
Not occupied.....	28,702	34,830	38,937	11,057	13,360	15,142	17,645	21,470	23,795
Occupied‡.....	27,011	29,377	32,483	16,737	18,787	19,730	10,274	10,590	12,753
Agriculture and forestry.....	14,128	14,131	13,842	7,750	7,735	6,619	6,378	6,396	7,223
Fishing.....	558	568	543	517	515	476	41	53	67
Mining.....	425	316	598	328	271	529	97	45	69
Manufacturing and construction.....	5,300	5,876	8,132	3,716	4,428	6,178	1,584	1,448	1,954
Commerce.....	3,188	4,906	4,882	2,158	3,406	3,006	1,030	1,500	1,876
Transportation & communication.....	1,037	945	1,364	975	907	1,214	62	38	150
Government and professional.....	1,192	1,762	2,195	884	1,360	1,515	308	393	680
Service.....	655	802	709	71	92	39	584	710	670
Miscellaneous.....	528	71	218	338	64	154	190	7	64
Per cent of gainfully occupied									
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture and forestry.....	52.3	48.1	33.5	46.3	41.2	33.5	62.1	60.4	56.6
Fishing.....	2.1	1.9	2.4	3.1	2.7	2.4	0.4	0.5	0.5
Mining.....	1.6	1.1	2.7	2.0	1.5	2.7	0.9	0.4	0.5
Manufacturing & construction.....	19.6	20.0	31.3	22.0	23.6	31.3	15.4	13.7	15.3
Commerce.....	11.8	16.7	15.2	12.9	18.1	15.2	10.0	14.2	14.7
Transportation & communication.....	3.8	3.2	6.2	5.8	4.8	6.2	0.6	0.3	1.2
Government and professional.....	4.4	6.0	7.7	5.3	7.3	7.7	3.0	3.7	5.3
Service.....	2.4	2.7	0.2	0.4	0.5	0.2	5.7	6.7	5.3
Miscellaneous.....	2.0	0.3	0.8	2.0	0.3	0.8	1.9	0.1	0.5

*Citations to sources, Table X.8.

†The armed forces in 1920 and 1930 included only those present in Japan Proper who could not be allocated to another category of the industrial classification. In 1940 the armed forces were reported by their closest civilian, relative and include armed forces and persons attached thereto, wherever stationed.

‡The unemployed are included, classified according to the industry of their usual employment.

§The three thousand women reported as in or attached to the armed forces are ignored here.

Japan's modernization did not impinge with equal force on all age groups in all geographical areas. Rather, there were limited segments of the total population and specialized regions of the country in which the transformation from agrarianism to industrialism proceeded rapidly, other age groups and other regions where the ways of the ancient continued with only the diffused impact of the new and alien forces operative elsewhere. The demographic foci for the new were youth, while the geographic foci were the cities, particularly the great conurbations of the Western littoral of Central Honshu.

The role of youth in manning the new industries and services was substantial, for youth were mobile and generally more adaptable and more adequately trained than the aged. In manufacturing industry and in com-

merce, for instance, the largest groups were the youngsters between the ages of 14 and 19, with heavy participation of those 20 to 24 and 25 to 29. Agriculture, on the other hand, utilized the very young whom the West would call children, lost substantial proportions of its adolescents, and retained or received back its aging and its aged. Cultural diffusion and attitude transformation received stimulation from this age-sex pattern of utilization, for the youth who entered the new occupations retained contact with their parental families. The fact that geographical movement was so often associated with occupational mobility quickened attitude transformation and stimulated the diffusion of the knowledge of the new throughout the nation.

The geographical localization of the population engaged in manufacturing industry was even more striking than its age concentration among youth. There were seven industrial provinces in Japan, if we define as industrial provinces those having one-fourth or more of their gainfully occupied men attached to manufacturing industry, less than one-third to agriculture: Tokyo, Kanagawa, Aichi, Kyoto, Osaka, Hyoko, and Fukuoka. These provinces were the centers of population concentration and the areas of highest per-capita productivity. From them through the human mechanism of a youthful industrial labor force came the greatest currents of change. Thus the forces of the new operated not alone in the cities but spread outward into the most remote rural hamlet of a once isolated and feudal land.

The Demographic Impact

The structure of the labor force in the interwar decades of kaleidoscopic change reflected the coexistence of poverty, economic development, and political expansion. Ancient verities survived, or appeared to survive within a physical matrix dominated by technology, but the prosaic tabulations of successive censuses indicate that here, too, diversity and change were replacing the relative stability of Meiji Japan. Poverty still forced youth to labor for subsistence at early ages, but advancing education and newly forming concepts of the public welfare operated to increase the age of formal entrance into remunerative employment. The higher status of the daughter limited her utilization in the rice fields, or the admission of such utilization, while mechanization of the textile mills lessened the number of peasant girls who served their allotted period of semiserfdom in the textile dormitories. Industries needed youth, discarded the aged—but the aged had few savings and in an urban milieu could not live without working. In all these multitudinous processes of adjustment and change people had little individual freedom to choose between remunerative labor or other alternatives, limited freedom to choose between lines of activity, for the all-pervasive fact was poverty, even though the poverty was less than that which had existed in Japan's own past or still existed in Asia's adjacent mainland.

The cultural reality of the changing Japanese scene is but ill-portrayed in these statistics on people as labor-force categories, for these categories are conceptualized by each person in terms of the total milieu which he knows. The agriculture of Japan is not the wide expanse of the Kansas wheat field, the red barns and the silos of the Wisconsin dairy lands, or even the unpainted shanties whose squalor belies the beauties of the American southland. Rather, it is the clustered village, the waving green or yellow of the rice fields, the utilization of each inch of soil in a garden land whose superficial beauty belies the poverty of a peasantry who cannot procure subsistence from the land alone. In the West the word industrialization is envisioned as the smoke-covered mass of a Pittsburgh, the epic of a Detroit, the miles along the Monongahela where a chemical empire has usurped the terrain of the log cabin and the man with the coonskin cap, or perhaps the mines of the Mesabi. In Japan there were the Yawata steel works, the mines of the Mitsubishi, the Niigata iron works—but there were also the household industry and the rural shops where peasant supplemented inadequate returns from the land through toiling long hours for quite inadequate wages. Traditional foods, clothing, and equipment were produced locally much as they had been in the days of the Tokugawa; patient workers sat the long days through to create the art that contributed so significantly to the dignity and the charm of a way of life that, inherited from the past, rejected alike many of the gadgets of the machine and the gaudy calendars of the business entrepreneurs.

Japan's economic transformation was at once of the West and of the East. It is typified by peasants in their traditional costumes tilling the rice lands in the ways of their forefathers, while overhead the high-tension wires carry the harnessed power of the mountain streams to an industry whose productivity would have been inconceivable even to the great statesmen of the Meiji Restoration who transformed a nation to achieve political power. City and country were intermeshed, too, for urban peasants toiled at hand labor in the tiny factories of a world metropolis while peasants who tilled the fields supplemented their meager incomes with the simple production that made them industrial workers and so contributors to the statistics that document the transition away from agriculture.

The city was the area of concentrated change. Here economic, demographic, and cultural factors combined to give to an increasing proportion of Japan's people the opportunity to escape the physical limitations of peasantry, to see and to think in paths that deviated increasingly from the sacred roads laid down by the ancestors so long ago. The new Japan was the Japan of the great cities, of Tokyo-Yokohama's industrial shoreline; of Nagoya's factories and transportation nexus; of the new and the old industries, the traditional culture, and the intellectual enlightenment in the historic cities of Osaka and Kyoto. From these, as from the lesser areas, new knowledge, new values, and new behavior patterns

spread out over the countryside. But the people from the countryside brought the heritage of physical poverty, the conservatism of feudal times, and the narrowness of an intellectually limited milieu into even the greatest of the cities. From these crosscurrents the new Japan was evolving in co-operation and in conflict. The merging of feudal and modern, of industry and agriculture, characterized the cities, but it also characterized the countryside. In the continuous interpenetration of the two, sharply divergent as they were in levels of income and in conditions of living and working, in economic and demographic structure, lay the basis for the changing familial mores and the changing reproductive habits of the Japanese.

WAR AND THE RECONSTRUCTION OF THE PATTERN

The analysis of the interrelations of population, labor force, and economic development that has been presented terminates with the year 1940. The logic of history and the course of statistical events alike dictated this time span. A comprehensive Imperial census was taken in 1940. The analyst could either survey status and interrelationships within the component areas of Japan and the subject countries or glance backward over the span of almost ninety years since the frightened advisers of a feudal shogun debated the inevitability of contact with the encroaching West.

The Census of 1940 that was terminus for Imperial Japan is the base line for the decade of crisis that followed. The documentation for this period is a superlative record of the demographic correlates and consequences of war, defeat, the liquidation of Empire, and reconstruction. Vital statistics were carefully collected and published in detail through 1943, for the government that envisioned the hegemony of a continent was disturbed by possible inadequacies of its manpower. As shortages of industrial labor became acute, a national survey was carried out in early 1944—thus giving a picture of the Japanese people and labor force at the point of maximum concentration. With the bombing of the cities censuses, registration compilations, and vital statistics disappeared; consequently the post-surrender government faced the urgent problem of a dispersed population whose size and distribution were unknown. Crude census forms were sent to the provinces to be reproduced and distributed locally through the *tonari gumi* or neighborhood associations. Returns were tabulated—and thus there is an enumerative survey of the age and sex composition of the population of the provinces close to the point of maximum flight and decentralization. Another survey was made in the spring of 1946. An "extraordinary census" was taken on October 1, 1947, and a ration survey was carried out in the summer of 1948. The regular enumerative census was executed on October 1, 1950. The vital-statistics system had been reconstituted in 1946; prolific records are available for 1947 and later years.

Analysis of the decade of the forties would be premature, for only

fragments of the definitive census of 1950 are as yet available. The analytical purist would require the census of 1960 before other than tentative conclusions as to the inherent dynamics of Japanese population and labor force in relation to the strength or the superficiality of the forces tending toward the perpetuation of or deviation from the trends of the past. The possibilities for analysis of some of the critical problems of political, economic, and demographic relationships in the industrializing East should be noted. The first and most difficult is that of the interrelations of rapid industrial transformation and the resort to war. It may be suggested that the "explosive" nature of the population pressure of the agrarian state may be grossly exaggerated. That state can "explode" in effective military action only as it is harnessed to and utilized by an industrial state. It is a tenable hypothesis that political and military hazards to peace lie in industrialization in process. The role of demographic factors as cause and consequence of Japan's prewar orientation, her politico-military expansions, the resort to total war and defeat merit the most serious exploration.

The more limited aspects of Japan's experience from 1940 to 1950 present challenging problems. There is the demography of war itself, the behavior of civilian birth and death rates and the military casualties. There is the fundamental and more long-run problem of the continuities of vital processes and vital trends through a war period and beyond.

Japan's problems of population increase and manpower utilization were intensified by the war. Direct military losses were limited. Birth rates were maintained and civilian mortality reduced during the war period prior to 1944. For the war years as a whole, 1941-45, there was a net surplus of births over deaths, including both civilian and military deaths. Repatriation brought back to Japan the people who had built Empire in the prewar decades, the "carpet-baggers" and essential civilian emigrants of the war years, and the survivors of the army. Many Koreans were repatriated, but many others either stayed or were soon returned. The birth rate shot upward as families were united and new marriages occurred. The death rate moved sharply downward under the comprehensive direction of the Public Health and Welfare section of SCAP. Natural increase was higher than it had ever been in Japanese history. The concern over "the population problem" seemed due to approach panic proportions. The population in Japan on October 1, 1950, was 83.1 million. This was almost 11 million more people than had lived in the same area in 1940. Population increase was not at or even near any probable termination point. In 1950 there were jagged irregularities in the age structure and sizable defects among the men who had been of military age in 1941-45. These were temporary, though, for the population is broadly based on today's children. The women reaching childbearing age are the survivors of the prewar period when birth rates were still high and infant and child mortality were being reduced sharply. Fertility is moving

downward toward its prewar trend line projected to the present; mortality may be even below its projected prewar trend. The termination of population increase remains a probability of the future; the fact of growth remains a problem of the present and the future.

The restoration of the prewar patterns in manpower utilization has been as striking as that in demographic patterns. During the war years there was a fantastic idea of re-agrarianism. There was some experience with it as people from the bombed cities and the repatriates of the Empire joined the demobilized soldiers in seeking sanctuary with the families whose ancient codes required that sustenance be given to lineal relatives in distress. The normal exodus from the villages was blocked. Sons and daughters who had been employed in the industries and the other activities of the urban world were home, and the younger brothers and sisters who would have gone away in earlier years had no alternative but to remain.

The basic studies of the Natural Resources Section of SCAP substantiated the thesis of the Japanese. Agriculture had few possibilities for further extensive or intensive developments. Its prewar manpower was too numerous; its capacities for permanent absorption of additional workers were very limited. In any event, agriculture could not solve the postwar problem of manpower utilization. Perhaps the loyalties of the family were not as strong as they might have been; perhaps the additional burdens were beyond the sustenance possibilities of many families. Many of the dislocated Japanese never returned to the ancestral families and the places of *honseki* but instead went to smaller cities and towns near the great cities in which they had once lived. Many repatriates were cared for in camps.

The economic and social compulsions to leave the agricultural villages and the crowded towns were so strong that legal barriers were long maintained against return into the great cities. These were only partially effective. Someway, somehow, people came back to the bit of land where there had once been a dwelling, to the city in which there had once been a job. If there were no jobs the people made them in the traditional Japanese pattern of home production and sale. "Unemployment," as officially defined, was virtually absent. This complete utilization of manpower with minimum unemployment may be viewed as empirical validation of the inapplicability of Western labor-force concepts outside the industrial economies for which they were created. Perhaps it attests the almost incredible achievement of a familistic and feudalistic social structure in absorbing the shocks of the industrial society in collapse.

Japanese population numbered 30 million in 1850. In 1950 it was 83 million. Japanese demographers anticipate a population of 100 million by 1970. The dynamics of birth and death rates projected into the future indicate ultimate cessation of increase. That ultimate period is not now or next year or the next. It is more than a generation hence for the manpower potentially available for the labor force. Japan has utilized her

increasing manpower in the past; she may do so in the future. Her experience merits the most careful analysis by those who plan the future for other areas with a dual emphasis on how the Japanese did what they did and what they might have done to lessen the magnitude and the duration of the population increase that accompanied their industrialization.

THE ASIAN RELEVANCE¹²

Japan constitutes one case study in the demographic correlates of modernization of a predominantly industrial type, albeit a peculiarly significant one. Japan's historic culture was Eastern. Her industrial and urban transformation was thus divorced from a base in the nonmaterial culture of the West except in so far as specific elements were deliberately selected for imitation or diffused through more informal mechanisms. Japan was shrouded in the quiescent seclusion of the Tokugawa *bakufu* when Europe awakened in the Renaissance and the Reformation. She had no Protestant ethic whose interconnections with the evolution of capitalism could be debated, no church whose familial pronouncements implemented the Pauline philosophy. Yet here within the East the demographic correlates of industrialization were roughly comparable to those in the West.

The population growth that accompanies indigenous and comprehensive industrial development and the slowing of that growth through a progressive limitation of childbearing are alike products of the changes in ways of living and thinking that are precondition and product of industrialization. The relations of culture and demography proceed through the intermediation of the economic process itself. Political stability, a disciplined labor force, and rapid capital accumulation are necessary aspects of substantial industrialization. Cultural factors exert a major influence on the extent and the speed of the economic transformation, for there are cultural preconditions to indigenous economic transformations and cultural limitations to imposed transformations. As industrialization extends over time and expands over wider segments of a nation, the demographic transition of declining mortality and declining fertility becomes a necessary consequence of the accompanying economic pressures and cultural stimuli. But industrialization regarded as economic, political, or social process is in turn modified by the changing dynamics of population. The relationships are complex; the particular constellation of factors that produced the population growth of Imperial Japan will not be duplicated in detail elsewhere. The fundamental fact, though, is that experience within the East corroborates the hypothesis deducible from Western experience: substantial increase in the size of the total population is a correlate of industrialization, but the social and psychological transformations implicit in in-

¹² These are excerpts from the following two studies of the writers: "Population Increase and Manpower Utilization in Imperial Japan," *The Milbank Memorial Fund Quarterly*, XXVIII (July, 1950), 290-293; and "Migration and the Population Potential of Monsoon Asia," *ibid.*, XXV (Jan., 1947), 43. They are reproduced with permission.

dustrialization result eventually in a lessened rate of reproduction and a slowing growth. Given the technologies and the basic values of the twentieth century, both population growth and the ultimate slowing of that growth are predictable consequences of the industrial and urban transformation of agrarian cultures.

If the experience of the one nation in Monsoon Asia that has achieved a substantial degree of industrialization can be transferred to project the future of the other cultures, industrialization and urbanization will lead eventually to declines in fertility that will first lessen and then eliminate the growth that accompanies modernization. There are two major uncertainties, however. The first concerns the validity of the assumption that the East is to achieve internal order, increasing agricultural productivity, and an expanding industrial economy. The second is whether, even under these circumstances, international movements, frontier expansion, urbanization, and declining fertility can operate rapidly enough to permit an accelerating decline in mortality such as that which accompanied the industrialization of the West and Japan. In Asia numbers are so great, the pressure of people on subsistence so intense, that time is crucial. Asia cannot afford to permit the transition from high to low fertility to evolve as a by-product of the pressures and the stimuli generated by the urbanization process. Levels of living, perhaps existence itself, for a large portion of that half of the world's people who live within Monsoon Asia may depend on the rapidity of the cultural developments through which numbers are related directly to the potentialities for their support within the familial social structure of the rural areas themselves.

PART THREE

SOCIAL STRUCTURE, THE STATE,
AND ECONOMIC GROWTH

Social Structure, the State, and Economic Growth

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... how slender an initial difference may come to be decisive of the outcome in case circumstances give this initial difference a cumulative effect.—THORSTEIN VEBLEN, *The Instinct of Workmanship* (p. 248).

THE PAPERS included in Part III have to do principally with effects exercised by the social structure and the apparatus of state upon the degree and the course of economic growth in the three countries under analysis. In this introductory essay an attempt will be made to indicate in general terms the manner in which a society's economic growth may respond to variations in its social structure and/or in its apparatus of state and the goal-facilitating role assigned to this apparatus.

Various indices may be employed, singly and jointly, to represent economic growth. For reasons of expositive convenience, however, our discussion is presented in terms of factors which may significantly affect the movement of aggregate and per-capita income and output.

The factors affecting economic growth, being manifold in quantity and quality, may be variously subdivided. (1) They may be subdivided into (i) factors which operate relatively directly and immediately upon various indices of economic growth and (ii) factors which operate upon these indices mediately and indirectly through the medium of factors included in category (i). (2) They may be subdivided into (i) relatively constant factors such as climate which merely condition or constrain growth; (ii) factors such as the relative "fulness" of employment, increases in which, being possible only up to a point, can exercise only a limited and non-continuing influence upon economic growth; and (iii) factors such as improvements in technology and increases in the stock of capital which, being susceptible of continuing augmentation, may continuously push certain growth indices upward. (3) While still other subdivisions are possible, they will not be utilized in this essay.

Subdivision of factors in accordance with scheme (1) into the direct

and the indirect calls for care, however, lest effects included under (i) and (ii) either are incorrectly aggregated, or are incorrectly evaluated. Suppose, for example, that an increment in income is completely accounted for in terms of direct determinants a , b , and c , the action of which is contingent upon the presence of indirect determinants a' , b' , and c' . The effects of these two sets of determinants, being sequential rather than joint, are not addible. It might be inferred, therefore, that the influence of a' , b' , and c' could be neglected. Such inference would not be valid, however, in any instance in which account needed to be taken of the fact that the behavior of a , b , and c was contingent upon the presence of a' , b' , and c' . To illustrate: Suppose one may wholly account for an increase in a nation's income in a given time interval in terms of improvements in technology and increases in the labor force and the stock of income-producing wealth. It would still remain true that these improvements in technology and these increases in wealth and the labor force reflect underlying behavior patterns which are what they are in part because of the functioning of the apparatus of state, the nature of the social structure, and the condition of other noneconomic factors.

Economic growth is influenced indirectly, on the whole, rather than directly by a society's social structure and its apparatus of state. While the influence of the state is here distinguished from that of the social structure, the two influences overlap. For many of the elements that compose the social structure are included also among the elements giving shape to the apparatus of state. Hence this apparatus may, for a variety of purposes, be considered a part of the social structure. These noneconomic elements may be said to affect economic growth primarily through the medium of economic and other factors which govern economic growth more directly.

As will be indicated, improvements in the apparatus and the effectiveness of the role of the state are discontinuous just as are improvements in the nature and the functioning of the social structure. Moreover, the capacity of these improvements to affect the rate of economic growth, even when it is potentially great, is both limited and subject to diminution. In other words, when virtually all possible such improvements have been made, it remains possible to augment a society's rate of economic growth through the making of still further such improvements only if in this society there take place other changes which in turn make desirable further modification of the apparatus of state, of its use, or of the social structure. In considerable measure, therefore, both the state and the social structure resemble agencies falling in subcategory (ii) of subdivision (2) described above.

Although the study of economic growth is concerned essentially with the way relevant events are ordered in time, our discussion of growth phenomena is couched largely in terms of comparative statics. Our inferences respecting the sequence of events in time are drawn largely from

associations that appear to exist between the relative magnitude of growth indices and various particular constellations of elements which make up the social and the economic structure at various points in time and space.

DIRECT DETERMINANTS OF ECONOMIC GROWTH

In this section several of the more important direct determinants of economic growth are described, since it is primarily through these, as a rule, that the state and the social structure influence economic growth.

1. Output per worker is conditioned by the amount of income-producing equipment in use per worker, and the rate at which output per worker increases in time is conditioned by the rate at which his equipment increases. Because the respective contributions of the direct determinants of the movement of output are not at present known or determinable with complete precision, the increment in output that will accompany an increment in equipment or in some other direct determinant is not precisely predictable in any given situation.

Two types of approach have been made to the determination of the contribution of increments in equipment to the growth of output. (a) It has been suggested that net output will grow at about the same rate as that at which the stock of income-producing wealth grows. This suggestion is based upon the assumption that past income-wealth relationships will continue into the future, and upon the inference that in recent decades the factors governing income-growth have caused income and income-producing wealth to grow at about the same rate. In reality, of course, the circumstances governing income-growth being what they are, the income-wealth relationship is subject to considerable variation in both the short and the long run. (b) According to production functions of the Douglas-Cobb type, in the absence of technological change and in the presence of constant returns,¹ a 1-per-cent increase in the amount of income-producing wealth per worker has been accompanied by an increase of something like 0.25-0.35 per cent in output per worker. Many economists question the acceptability of such estimates, however, given the nature of the data on which they are based.²

In view of what has been said, a nation's economic growth is significantly conditioned by the rate at which it saves and incorporates its savings

¹ Here the condition of constant returns signifies that if all the factors of production increase in a given proportion and the total output increases in a greater (lesser) proportion, technology remaining unchanged, increasing (diminishing) returns obtain. Greater specialization, even with technology given, might permit output to increase disproportionately when all the productive factors increase by a given fraction. The exhaustion of first-grade *free* resources might account for the existence of diminishing returns.

² On production functions, see Gerhard Tintner, *Econometrica* (New York, 1952), pp. 51-57, 91, 141; Jan Tinbergen and J. J. Polak, *The Dynamics of Business Cycles* (Chicago, 1950), chaps. ii, x, and references cited. See also William Fellner, "The Capital-Output Ratio in Dynamic Economics," in *Money, Trade, and Economic Growth: In Honor of John Henry Williams* (New York, 1951).

in the form of income-producing wealth. On the assumption that a nation's income-producing wealth approximates 4-5 times its annual income, conversion of 10 per cent of its national income into income-producing wealth would increase the latter 2-2.5 per cent per year. While this rate in turn might initially make possible an income increase of something like 0.5-0.9 per cent, given the validity of estimates based upon the Douglas-Cobb type of production function, the latter rate still would fall gradually if the increase in wealth were unaccompanied by any other income-producing changes. If, however, technology improved sufficiently from year to year, the 10-per-cent saving rate might be accompanied by something like a 2-2.5-per-cent annual increase in the national income. If in addition the labor force increased 1 per cent per year the national income would be further increased, but by less than 1 per cent (say, e.g., 0.65-0.75).³

2. Output per capita is conditioned also by the amount of investment made in the person of the representative member of a population. This investment augments the individual's physical well-being and contributes to his technical education, to his occupational training, and to his social discipline. It is the principal medium through which the selectively cumulated stock of useful scientific, technological, and related knowledge of a population is passed on to its recruits and the main means by which a people's capacity to invent, introduce, and exploit improved methods is maintained when not increased.⁴ International differences in personal investment appear to be responsible in a significant degree for international differences in per-capita income.

3. Output per worker often is capable of being significantly increased, so long as a country's agricultural population is relatively large, by the transference of workers out of agriculture and into nonagricultural

³ The figures presented in this paragraph are merely intended to represent the order of magnitude, but not the precise dimensions, of the income-increasing effect of increments in a nation's labor force and stock of wealth. These figures are based, furthermore, upon estimates derived through use of the Douglas-Cobb type of function, and hence are open to question.

⁴ This category of investment is subject, as are all other categories of investment, to the principle that free resources should not be employed in any sector beyond the point where the marginal yield, under ideal-output conditions, falls short of the marginal cost. As a matter of fact, however, investment in the improvement of personnel often is not carried far enough, either because the gain resulting therefrom tends to be underestimated, or because a portion of it tends to flow into hands other than those of the immediate beneficiary of the training. Put technically, the marginal social benefit of the training exceeds its marginal private benefit; and this discrepancy continues to exist, though in diminished degree, even when "education" is financed up to a point out of public funds. Similar discrepancies may, of course, characterize other forms of investment, particularly when these investments have to do with economic development and change and are therefore likely to produce effects that are widely felt and difficult of precise assessment. E.g., see H. B. Chenery, "The Application of Investment Criteria," *Quarterly Journal of Economics*, LXVII (Feb., 1953), 76-96.

employment. The increase arises out of the fact that output per worker frequently is much higher in nonagricultural than in agricultural employments and that, therefore, transference out of agriculture diminishes the relative magnitude of a comparatively less productive component of the labor force. Improvements in agricultural methods, together with the fact that income and price elasticity of demand for agricultural products tends to be relatively low, operate to reduce the absolute number of agriculturalists needed. The possibility of an income gain from transference out of agriculture is a diminishing quantity, becoming negligible (in the absence of expandable food imports) when a nation's agricultural population has diminished to a size roughly commensurate with the aggregate population's longer run raw-produce requirements.⁵

4. Income per capita depends upon the average number of hours worked per capita, and tends to vary with this average, other conditions being given. The average number of hours worked per capita depends principally upon: (i) the labor force: population ratio, which in turn depends significantly upon the relative number of persons of working age in the population; (ii) the extent to which members of the labor force can escape involuntary unemployment; and (iii) the disposition of men to put forth effort, which in turn depends upon their values, their motivation patterns, their appraisal of leisure in terms of goods and services, the reward system in effect in a society, and the various institutional conditions surrounding the choice and pursuit of occupations.

5. Output per worker depends upon the level of technology in use, and its movement upon the rate at which technology improves. Since the contribution of improvements in technology to the augmentation of output per worker is not determinable with precision, its magnitude has rarely been estimated.⁶

6. Output per worker depends upon the relative number of persons capable of performing and free to perform entrepreneurial functions. Among these functions are here included the making of decisions respecting the organization and combination in time and space of the various

⁵ The source of gain described is but the most outstanding instance of a source of gain that exists whenever the marginal productivity of any factor of production is lower in its current employment than in some other employment of which it is capable. The discrepancy between what a factor is producing and what it could produce in its comparatively most effective employment may arise out of preference for the former type of employment, out of ignorance of alternatives, or out of denial of access to the better employment by quasi-monopolistic and related arrangements. E.g., see L. W. McKenzie, "Ideal Output and the Interdependence of Firms," *Economic Journal*, LXI (Dec., 1951), 785-803.

⁶ Tinbergen and Polak estimate that technical improvements have increased per-capita output about 1 per cent per year in representative industrial countries in the past eighty years (*op. cit.*, p. 128). They include under the head of income increase attributable to technical improvements all increments not attributable, on the basis of the production function employed, to increments in the labor force, capital, and other resources.

factors of production, the stimulation and exploitation of improvements in methods of production, and discovery and use of new resources, the creation of new goods and services, together with the generation of demands for these new goods and services, and so on. While these functions may be performed within the frameworks, respectively, of a free-enterprise economy, of a mixed economy, or of a collectivized economy involving much or little centralization, the manner in which the various functions are performed will almost necessarily be conditioned by this framework. The extent to which an entrepreneurial group exists and is free to function effectively varies widely; it is significantly conditioned, as will be shown, by the values dominant in a society as well as by various elements in its social structure.

Aggregate national income grows so long as either population, or income per capita, or both grow. Some connection obtains, however, between the growth of population and the growth of income per capita. (i) Increases in per-capita productivity and income have usually been accompanied by some increase in population, increments in aggregate income being devoted in part to the improvement of the material conditions of life and in part to the increase of numbers. (ii) Population growth, together with the resulting increases in population density, may increase or decrease the rate at which per-capita income rises. (a) The anticipation of population growth consequent upon past population growth, if it raises entrepreneurial expectation of the growth of demand to a level commensurate with full employment from a level significantly lower, may operate to elevate somewhat the rate at which per-capita income grows.⁷ Presumably, weight is to be attached to this point only if, in the absence of some stipulated amount of population growth, full employment is not attainable through the use of generally approved means; and then only so long as the population's access to resources is sufficient to permit the growth of both numbers and per-capita income. (b) The growth of population may also increase the rate at which per-capita income grows by enlarging the accessible market for goods and thereby (i) extending the division of labor within the limits set by the state of the industrial arts, (ii) stimulating the improvement of the industrial arts, and (iii) otherwise giving rise to external and (possibly) internal economies. Influences (a) and/or (b) appear to have been associated with population growth in many countries in the nineteenth century, and they will probably continue operative in underdeveloped countries with relatively sparse populations. (c) In relatively well-peopled countries, however, popula-

⁷ Here it is meant merely that per-capita income, as ordinarily measured, grows. Account is not taken of the fact that population growth may so diminish per-capita consumption of some goods or services, whilst supplying no offsetting substitutes, that real per-capita income falls, given persistence of the pattern of tastes in effect before the population growth took place. See the writer's "Welfare Economics and the Problem of Overpopulation," *Scientia*, LXXXIX (5), 1954, 166-171.

tion growth is likely to slow down the rate of increase of per-capita income by increasing the relative scarcity of not readily replaceable resources, by absorbing resources that might otherwise have assumed the form of capital, and by diverting capital from the augmentation of equipment per worker to the provision of equipment for new increments to the population. As a rule population growth makes for the growth of aggregate income; for even if population growth were accompanied, not by a constancy or by an increase of per-capita income, but by a decrease therein, it still would be unlikely that the proportionate fall in per-capita income would more than offset the proportionate increase in the population.

INDIRECT DETERMINANTS OF ECONOMIC GROWTH

Indirect determinants of economic growth affect it through their influence upon the direct determinants. Since the role of the indirect determinants will be further discussed when the influences of the state and the social structure are examined, only some of the indirect determinants need even be indicated.

1. The values men set store by, together with the patterns of motivation associated with these values, have much to do with how men canalize their activity. That in a sense economic growth may be said to be the product primarily of human action is suggested by the fact that so large a fraction of the net national product is imputable to labor. Economic growth will proceed most rapidly, therefore, when the dominant values favor activities which are both economically productive and conducive to capital accumulation and technical progress.

2. In view of the significance of the state of the industrial arts, the institutional circumstances relating to the accumulation and diffusion of knowledge that is scientific and calculated to make for growth assume great importance.

3. The laws and institutions relating to interpersonal contracts and the use and conveyance of property, to the nature and impact of the tax system, to the provision of media of exchange, to the forms of entrepreneurial organization established, to the market organizations which bridge the gap between the final consumer and the "original" factors of production, and so on, have much to do with the congeniality of the politico-legal milieu to economic growth and activity.

Most of these indirect determinants of income growth are components either of the common culture of a population, or of subcultures shared by individuals composing groups within the population. Many of the indirect determinants therefore may be said to exist in the "minds" of the population, sometimes internalized in the personality and sometimes less deeply set; or they may be embodied in artifacts such as books, legal registers, inscriptions, and so on, whence they may be communicated to minds. As will be noted later, indirect determinants tend to cluster non-randomly in cultures as well as in minds which tend to mirror cul-

tures. Since indirect determinants of culture do largely exist in minds, modification of these determinants in a manner suited to make them more or less favorable to economic growth, must consist primarily in changing the content of minds.

THE ROLE OF THE STATE

In this section, concerned with the potential contribution of the state to economic growth, limitations on the state's growth-affecting capacity will be indicated, commonly advocated grounds for action by the state will be specified, and specific illustrations will be presented of what the state may do.

The state is not an autonomous organization with a given quantum of power that may be employed to accomplish divers purposes. It is rather a variable collectivity of variable elements, constituting, just as does the economic system, a major component of the all-inclusive societal system. The state may be looked upon, therefore, as an association to which a variety of functions have been or may be assigned, and in the possession of which is an apparatus of widely varying capacity to affect the course of events. To illustrate: (i) The role of the state varies with the nature of the regnant social system. The democratic state is an agent of the community whereas the contemporary totalitarian state pretends, as in lesser measure did the nineteenth-century dynastic state, to be coterminous with the community. (ii) The goal-accomplishing power of a state depends upon factors which reflect how advanced the society and its economy are, such as the quality of the bureaucracy and the technical apparatus employed by the state. (iii) The state's capacity to accomplish goals depends upon the degree to which these goals are compatible with those subscribed to by the population, or its more powerful subgroups.

Because the state is a component of an all-inclusive societal system, the nature and the capacity of the state undergo modification in consequence of changes in other components of the societal system. For example, when a folk society is transformed into a feudal society, the state changes accordingly, with the result that it can give comparatively more aid or put up more resistance to growth and industrialization.⁸ Again, if a state fosters industrialization and economic growth, it brings into being changes which in turn must markedly modify the character of the state.⁹ It is essential, therefore, that the variability of the roles and the character of the state always be taken into account.

In societies in which the state is looked upon as essentially an agent of the society or community, it has long been held that the state should

⁸ E.g., see Gideon Sjoberg, "Folk and 'Feudal' Societies," *American Journal of Sociology*, LVIII (Nov., 1952), 231-239.

⁹ E.g., see Thorstein Veblen's account, written in 1915, of the probable impact of industrialization upon the feudal structure and "spirit" of Japan, in Leon Ardzrooni, ed., *Essays in Our Changing Order* (New York, 1934), pp. 248-266; also Veblen's *Imperial Germany and the Industrial Revolution* (New York, 1915).

intervene when, usually because external economies and diseconomies of production or consumption are involved, the point at which the marginal social benefit of a policy approximates its marginal social cost differs significantly from the point at which the marginal private benefit of such policy approximates its marginal private cost.¹⁰ When this is the case, unrestricted private execution of the policy in question results in a misuse of resources and consequently in a smaller output and capacity to save and grow than would have resulted had the state effectively intervened. In these circumstances, therefore, it is commonly held, the government may with propriety intervene in whatever way seems most appropriate. It may set up its own corporation or some analogous agency to carry out the policy adequately. It may acquire purchasing power through taxation, borrowing, or the creation of media of exchange, and utilize this purchasing power to employ private firms to carry out the policy in right measure. It may utilize taxes, subsidies, quotas, penalties, Lerner's "counterspeculation," and other devices to divert resources into (out of) the supposedly underexploited (overexploited) areas of activity. Or it may resort to a combination of these methods. Illustrative of state intervention on the ground indicated has been support of education, the cumulation of knowledge, the provision of transport and communication facilities, the development of "infant" industries and areas (e.g., TVA), and so on.

A discrepancy may arise between the point of equality of marginal social benefit and cost and the point of equality of marginal private benefit and cost for reasons that are essentially institutional in character and hence modifiable, or for reasons that seem to inhere in the manner in which firms, individuals, etc., are interrelated in a society. In the former category may be placed discrepancies such as tend to arise out of monopolistic and related pricing arrangements which make for the underutilization of resources, out of private regulation of the volume of money, or out of the fact that savers and investors are not wholly identical. In the latter category fall discrepancies which arise out of the fact that the time horizon and the discount rate appropriate to the community may differ from that governing individuals and small groups, or out of the fact that the benefits or the costs arising from some ventures are too highly dispersed to be accurately reflected in private accounts. Typical of this latter category are many undertakings essential to economic growth: support of education, research, and the cumulation of knowledge; formation of an appropriately differentiated and situated labor force; provision of various physical facilities essential to economic development; the undertaking of ventures with slow capital turnover, etc.

¹⁰ E.g., see Lionel Robbins, *The Theory of Economic Policy in English Classical Political Economy* (London, 1952), chap. ii; W. J. Baumol, *Welfare Economics and the Theory of the State* (Cambridge, Mass., 1952), chaps. ii, xii; A. P. Lerner, *The Economics of Control* (New York, 1944); Chenery, *op. cit.*

It is not easy, particularly when all resources are in use, to fix upon an "ideal-output" policy calculated to redress discrepancies of the sort described above and conduce most effectively to economic growth. The extent of a discrepancy is not easily determined, since the content of social cost turns in part upon the assumptions made, and since it is not easy to proceed from empirical estimates of costs reported in public and private accounts to estimates of costs in social terms when an economy is shot through with the consequences of imperfections of competition and/or of defects in the central planning mechanisms in use.¹¹ For this reason, and because the formulation of a policy may involve additional arbitrary assumptions, the case for choosing any particular ideal-output policy may not be strong. Moreover, governmental stimulation of economic growth may not be accorded much weight in the output policy decided upon if it is considered more difficult to formulate and select government-sponsored policies relating to the future than to the present.

Over against this manner of reasoning, which operates to discourage governmental intervention for the purpose of securing an ideal output and/or stimulating economic growth, may be set other factors, consideration of which is likely to prompt the selection of growth-favoring policies despite the presence of the difficulties discussed. Ideal output usually is defined in terms of existing tastes and income distribution. Accordingly, if growth-fostering policies are favored, it may be inferred from the ease with which tastes can be modified that no particular ideal-output solution should be taken too seriously, and it may also be concluded from the inequality with which income is distributed that the diversion of a large amount of the income of the wealthy into investment in growth will not greatly reduce "welfare" in the present while significantly increasing it in the future. Of still greater importance is the possible inference that only through state intervention can much economic growth be achieved, for in this event not much weight is likely to be given to making growth-favoring policies conform closely to ideal-output specifications. Such an inference is probable when private agencies lack the power and/or the resources to carry out large-scale growth-promoting ventures, or when, given relatively complete consumer sovereignty and freedom of choice, a population fails to make resources available in the kind or quantity required for a significant degree of growth. Of importance also is the fact that, since many policy combinations are always available to meet any specific problem, it is seldom if ever likely that any one combination will in practice be highly preferred to all others on ideal-output or other grounds.¹²

¹¹ E.g., see K. W. Kapp, *The Social Costs of Private Enterprise* (Cambridge, Mass., 1950); McKenzie, *op. cit.*; Tibor Scitovsky, *Welfare and Competition* (Chicago, 1951), esp. chap. xxi; Baumol, *op. cit.*; Chenery, *op. cit.*

¹² On the multiplicity of available policy combinations, see J. E. Meade, *The Theory of International Economic Policy*, Vol. I, *Mathematical Supplement* (London,

As has been indicated, the extent to which economic growth is stimulated beyond the amount compatible with some specified ideal output resting upon current tastes and income distribution varies with the type of state, the values of the dominant class, the distribution of political power, elements in the social structure conducive or nonconductive to growth, and so on. If the state is "totalitarian," its apparatus can be and probably will be devoted more completely to the stimulation of growth than if this is not the case, provided that the satisfaction of other "totalitarian" values (e.g., militarism) does not absorb too many resources. For a totalitarian state may disregard much more than may a liberal state the values and the tastes of the underlying population; and it may also more readily undertake, at least in the short run, to decompose growth-retarding elements found in the existing social structure. The tastes and values underlying what has been called ideal output therefore merely help to set a kind of limit to the capacity of a totalitarian state to influence growth. Accordingly, the discrepancy between the amount of growth that is compatible with ideal-output specifications and the amount that is actually determined upon by totalitarian-state policy-makers will be significantly conditioned by the extent to which the values and aspirations of the class controlling the state apparatus differ from those of the underlying population. In the liberal state, by contrast, the values of the dominating groups cannot differ so greatly from those of the underlying population, and the ruling group is able to disregard in but a limited degree the tastes and the values of the underlying population.¹³

Since the stimulation of economic growth is much more likely to be assigned great weight in underdeveloped than in developed countries, it should be noted that the concrete tasks of the state will not be the same in the two classes of countries. The task of the state in a developed country is in some measure one of fostering the undertaking of relatively new and untried ventures; its role therefore is in part that of creative innovator and/or underwriter. The task of the state in an underdeveloped country, by contrast, is primarily that of an adapter. In such a country growth can best be facilitated by introducing and adapting to local circumstances those methods and practices which have helped to produce growth elsewhere; there is as yet little need for undertaking the new and the untried. It may well be, therefore, that the apparatus of state, though capable in but a limited degree of directly and continuously fostering creativity and the undertaking of new and untried ventures, is well suited to facilitate the introduction and adaptation of methods success-

1951). There does not appear to be much information available concerning the circumstances that govern the selection of policy combinations when a large number are available. Presumably the vast majority of the combinations available are not even considered, choice being made from a relatively small number.

¹³ E.g., see R. M. MacIver, *The Web of Government* (New York, 1947); Walter Eucken, *The Unsuccessful Age, or the Pains of Economic Progress* (London, 1951).

fully used elsewhere, together with the formation of cultural factors essential to the successful use of these methods. If this be the case, the contribution of the state to economic growth will be much greater in countries which remain relatively underdeveloped than it was in the countries where modern industrial culture first flourished.

It may be noted parenthetically that for other reasons also the contribution of the state to the stimulation of economic growth in underdeveloped countries is likely to be very great. First, the ideological climate today in the underdeveloped countries is much more favorable to the use of the state apparatus than was the case in North America and Western Europe in the late eighteenth and nineteenth centuries. Second, the roots of contemporary ideology as well as the ideologies prevailing in many underdeveloped countries are different from those found in highly developed and erstwhile "liberal" countries. Third, since the economic role of the state appears to expand as per-capita income rises, the actual economic role of the state is quite large today even in high-income nations whose nineteenth-century ideology was "liberal," but this role is not especially growth-oriented. Fourth, for a variety of reasons it may be inferred by those with the power to affect policy that only through a large amount of state action can industrialization and economic growth be greatly stimulated.

While it is evident what the state must do if it would step up the rate of economic growth, it is not evident just what the state may do *compatibly* with rules of the sort used to define "ideal output" and assure its achievement. This problem having been touched upon, however, and some of the issues indicated, a few of the ways in which the state can stimulate economic growth will be indicated. Attention will be devoted, however, only to the role of the state in countries where, as in several under discussion in this volume, modernization has not proceeded so far as in the relatively advanced industrial countries. Growth problems are by no means the same in the two sets of countries, the maintenance of full employment and the supply of collective goods (for example) being of more concern, and the problems discussed below being of less concern, to the more advanced than to the less advanced countries.¹⁴

1. Facilitation of the formation of physical and personal capital is perhaps the major contribution that the state can make to economic growth. On the assumption that welfare considerations may be disregarded,¹⁵ the state may intervene to divert something like the maximum possible fraction of a nation's labor force and current flow of resources to the

¹⁴ Compare W. W. Rostow, *The Process of Economic Growth* (New York, 1952) and the essays of Moses Abramovitz and P. A. Baran in B. F. Haley, eds., *A Survey of Contemporary Economics* (Chicago, 1952).

¹⁵ F. J. Atkinson concludes that the decision how much to invest in a socialist state may or may not be a political one. See his "Saving and Investment in a Socialist State," *Review of Economic Studies*, XV (1947-48), 78-83. In such a state welfare considerations presumably would be given much more weight than they are in the discussion that immediately follows.

increase of those components of the nation's capital stock in relatively the greatest need of augmentation and to the development of a skilled, highly differentiated, and appropriately situated labor force. Action along these lines eventually tends to provide the kind of equipment and personnel required to diffuse the relatively advanced forms of technology introduced from abroad, together with those perfected at home. The contribution to growth made possible by domestic capital formation may be supplemented in a limited degree through foreign borrowing provided that the exchange thereby obtained is used, along with exchange gotten through exportation, to hire foreign technical personnel, to purchase needed equipment and raw materials which are produced abroad, and to import only those consumables whose influx releases domestic resources from the production of consumables to that of capital and that of produce and materials in which the country has a comparative advantage.

Since technology may be looked upon as given at any point in time, how large an amount of resources can be diverted to the formation of physical equipment and personal capital turns, in any short interval, upon the magnitude of the volume of resources that can be kept out of idleness and comparatively unproductive activities and at work, upon the effectiveness with which these resources can be made to produce, and upon the relative smallness of the amount of consumables with which the labor force can be kept content, compatibly with its putting forth that amount of effort which maximizes the surplus available for capital formation.¹⁶ Diversion of resources from nonuse and from comparatively unproductive activity in employments such as agriculture, divers handicrafts, and some branches of distribution may be accomplished through the imposition of price disadvantages and penalties upon idleness and upon continuation in relatively unproductive employments; through the use of price and other incentives designed to draw workers into favored employments and out of those in comparative disfavor; and through the creation of enough money to generate mild inflation, some exploitation of the suppliers of labor and other services, and hence overemployment.¹⁷ The consumption

¹⁶ Let w represent the marginal supply price to the state or the society of an increment of labor-time; c , the increment in the amount of consumables that must be turned over to the labor force in order that this increment of labor time will be forthcoming; and o , the increment in total output consequent upon the employment of this increment in labor-time. Suppose further that $w-c$ is taken from the suppliers of this increment of labor-time through taxation, borrowing, and other means. Then so long as $o > c$, the employment of the increment in labor time is warranted, at least in the short run before the state must repay loans made to it by the suppliers of the increment in labor-time. Moreover any reduction in the average amount of consumables made available per employed worker, which reduces the total volume of output, correctly valued in money terms, by more than it reduces the corresponding money value of the total volume of consumables going to the labor force, will reduce the surplus available for capital formation.

¹⁷ The experience of eighteenth-century England and late nineteenth-century Japan illustrates, as presumably does the experience of other countries and times,

of wage-earners and other suppliers of productive services may be held down by combinations of the following: concerted activity on the part of entrepreneurs to underpay labor and other productive services; discouragement of consumption through the use of excise taxes, rationing, and related controls; abstraction of purchasing power from wage earners and others through income and other taxes and through compulsory borrowing. Exchange controls may be employed to restrict the use of foreign exchange to those who will utilize it directly or indirectly to augment the nation's stock of capital. The effectiveness with which a nation's resources are used turns, technical and organizational conditions being given, upon the extent to which motivation to produce can be supplied under conditions such as have been suggested, upon the skill of the entrepreneurial class, and upon the uses made of the resources kept out of the hands of the suppliers of labor and other services by the consumption-reducing devices described above.

The set of policies described must be looked upon as comparatively short-run in character, in so much as they entail great deprivation and austerity.¹⁸ In the longer run, therefore, the state will find itself under increasing compulsion to allow greater expression to consumer sovereignty and freedom, and a consequent diminution in the relative amount of forced saving. How soon after the initiation of a policy of forced saving this compulsion becomes great enough to induce the state to reduce the rate of enforced saving is not readily determinable from past historical experience or from what is known of man's relevant behavior patterns. Presumably, the length of the period during which forced saving at a high rate can be maintained depends upon the methods employed by the state, upon the extent to which the forced rate exceeds what would have been the voluntary rate, and upon various other circumstances internal and external to an economy. It seems probable that, in the absence of major new disturbances such as war, the influence of consumer sovereignty and freedom of choice would make itself increasingly felt with the passage of time.¹⁹

the stimulus given to capital formation by inflation when it does not result in more exploitation of the victims of inflation than is compatible with the prevailing social structure and when the savings enforced by inflation are put to productive use by a competent entrepreneurial class. E.g., compare E. J. Hamilton, "Profit Inflation and the Industrial Revolution, 1751-1800," *Quarterly Journal of Economics*, LVI (Feb., 1942), 256-273, and "Prices as a Factor in Business Growth," *Journal of Economic History*, XII (1952), 325-349. But see also M. Bronfenbrenner, "The High Cost of Economic Development," *Land Economics*, XXIX (1953), 210 ff.

¹⁸ Two forms of enforced investment are likely to encounter relatively little opposition. (i) Investment in personal capital—i.e., in education and training—is much more likely than investment in productive physical assets to be looked upon as at least a partially acceptable substitute for consumption goods and services. (ii) The diversion of savings from unproductive (e.g., ornaments) to productive forms of investment probably entails a lesser psychical cost than does the diversion of resources from consumption to capital formation.

¹⁹ Concerning the experience of Soviet Russia, see the papers by Gregory Grossman

2. Because the measures discussed under (1) involve much deprivation and austerity, they may operate as negative work incentives and reduce the volume of effort. Accordingly, countervailing work incentives must be provided by the state until such time as the policies described under (1) are relaxed and sufficient sway is again allowed to consumer sovereignty and freedom of choice.²⁰ These countervailing incentives must give rise to wants while not reducing current capital formation and they must produce such social, occupational, and geographical mobility as is essential to the expansion of aspirations and the flexibility of the labor supply. Among the courses of action open to the state are such as the following: (i) stress upon deferment of gratification—that is, emphasis on future satisfactions, individual and collective, in order that the short-run sacrifices will seem to be justified in view of the prospective long-run gains; (ii) recourse to various nonmaterial incentives as well as to bonuses and special consumption perquisites which absorb relatively little of current resources; (iii) generation of a sense of popular participation in the forcing of the economic-growth process through the manipulation of media of communication, the enlistment of trade-union support, and so on; (iv) expansion of wants and intensification of economically oriented aspirations in the population through the removal of those barriers to economic and social mobility which restrain the development of wants and aspirations.²¹

3. The state can facilitate the formation of an entrepreneurial class if it does not exist, and give it strong support after it has come into existence. The state can do this by attaching great prestige to the entrepreneurial role, by allowing private entrepreneurs to retain high returns when they win them through productive efforts, by establishing tax, monetary, and legal arrangements conducive to trade and the assembly of capital, by diminishing the influence of noneconomic factors which operate to depress the return of capital, by relieving entrepreneurs of many of those costs of economic development which are inadequately offset by gross income, by

and Norman M. Kaplan in Abram Bergson, ed., *Soviet Economic Growth: Conditions and Perspectives* (Evanston, 1953).

²⁰ It is usually said that whether or not a reduction in the remuneration of human effort results in a diminution in its supply turns on whether the work-favoring diminution in income offsets the leisure-favoring diminution in the relative cost of leisure. See J. R. Hicks, *Value and Capital* (London, 1939), pp. 36-37. At issue in the present discussion, however, is more than the sum of the income-effect and the substitution-effect of a reduction in remuneration. There is at issue rather the nature of the response of the supply of effort to variations in the total system of deprivations, gratifications, and rewards in effect in a given society; and such variation involves changes in some of the conditions underlying Hicks's formulation of the problem. E.g., see Talcott Parsons, *The Social System* (Glencoe, Ill., 1951).

²¹ E.g., see Wilbert Moore, *Industrialization and Labor* (New York, 1951), esp. Part II. Professor Moore made a number of suggestions respecting the content of the above paragraph. See also Elizabeth E. Hoyt, "Want Development in Underdeveloped Areas," *Journal of Political Economy*, LIX (June, 1951), 194-202; my "Changes in Income Distribution and Social Stratification: A Note," *American Journal of Sociology*, LIX (1953), 254-255.

making access to capital easier, and by permitting entrepreneurs considerable freedom of action. Analogous steps may be taken if agents of the state perform the entrepreneurial functions.

4. The state must give strong support to institutions and individuals engaged in the cumulation, diffusion, and utilization of basic and applied science.

5. The state must create a climate of values, a milieu of institutional arrangements, a pattern of expanding wants and aspirations, a suitable system of motives and incentives, and a social structure conducive to science, technology, economically productive work, stability of expectations, the importance of monetary criteria and symbols, and so on.

6. Inasmuch as developing countries depend upon foreign markets for both supplies and sales, the state may sometimes be able to institute exchange and trade controls which increase the growth stimulus and assistance to be had from foreign trade.

7. The state can assemble information respecting the factors that have accelerated and the factors that have retarded growth in other countries and utilize this information, as did nineteenth-century Germany and Japan, to avoid the mistakes, the wastes, and the long gestation periods previously experienced by the now more advanced countries. If this information is thus acted upon, growth can proceed more rapidly in some of the less developed countries than it did in those now highly advanced.

It has been suggested in effect that the state can set up a very strong substitution effect in favor of economic growth, in part by restricting consumer sovereignty much more than would appear tolerable in an occidental or liberal state where industrialism had made great progress. This substitution effect is subject to certain limitations, however, as has already been implied. Some of these limitations arise from circumstances unconnected with the extent of the economic role of the state, and some appear to be associated with the approach of a relatively high degree of development. Illustrative of the first kind of limitation is the fact that, in a world in which neither goods nor population can move freely across international boundaries, the size of a politico-economic unit is important. If it be too small, and most such units are too small, it will lack both resources and opportunities for as much internal mobility, specialization, and trade as is essential to long-continued economic growth. Today, as a rule, therefore, small units can escape the limitations imposed by size principally through integration into larger units. Illustrative of the second kind of limitation is the increasing importance of the correctness with which productive services are distributed among uses and the growing need to take consumer sovereignty into account. A heavily peopled, underdeveloped country tends to be characterized by an industrial reserve army of unemployed and underutilized agents of production, thus resembling a developed country in the depth of depression. When this is the case, national income and economic growth may be greatly increased by em-

ployment-creating policies even though these policies are only roughly guided by economically correct principles of allocation, since in the absence of such policies the productive agents in question may produce very little. As unemployment and underemployment diminish, however, especially in agriculture, the use to which factors of production are put through state policy becomes increasingly important, since the output of the factors in alternative uses may be significantly higher. Again, as an economy becomes developed, and it becomes possible to reduce the rate of capital formation and increase the output of consumer goods and services, consumer sovereignty and freedom of choice become relatively more important, with the result that the decentralization of authority over entrepreneurial decisions in the consumer field becomes increasingly essential to the pursuit of policies compatible with consumer freedom of choice, changing tastes, and a dynamic technology.²²

Under a societal system that embraced free enterprise and the liberal state, Western Europe and North America developed a set of values, aspirations, and habits highly congenial to economic growth, though not congenial in the same degree in all countries. In present-day underdeveloped countries it is likely, however, for reasons already given, that the state will play a much greater role in promoting economic growth than it did in the nineteenth century. Let it be admitted that during the period when a developing society is borrowing and adapting rather than creating new methods and instruments of production, it can progress more rapidly under the auspices of a strong state than under the guidance of a weak state of the liberal sort. It still does not follow that in such a society dominated by a strong state, growth-favoring values, aspirations, and habits will continue to flourish (and particularly after the need to create has become ascendant over the need to borrow and adapt) as they appear likely to flourish in a society in which either the state is relatively weak or the bulk of economic decision-making is decentralized. If it be true, as has been suggested, that the relative importance of consumer sovereignty and freedom of choice tends to increase as a society progresses, then an increasing degree of decentralization of entrepreneurial decision-making is both indicated and likely to develop even in societies in which the economy has been dominated by the state.

THE ROLE OF SOCIAL STRUCTURE

In this section the dependence of economic growth upon the nature of the social structure is inquired into. Such an inquiry must be formulated in terms of the basic elements of which a social structure is constituted, just as an economic inquiry must be conducted in terms of the basic behavioral elements of which the economy is composed. Use will be made of Par-

²² Concerning what industries appear to be suited and unsuited respectively, to the centralization of entrepreneurial decisions, see J. K. Galbraith, *American Capitalism* (Cambridge, Mass., 1952), chap. xii.

sons's approach since, as it is based in part upon empirical findings, it is suited to illustrate some of the ways in which growth phenomena and variations in social structure are connected.

Parsons identifies three or four levels of fundamental units into terms of which a social system or a social structure may be translated. At the lowest level is the *unit act*, action oriented to the attainment of ends being the stuff that connects individuals with one another. Actions become organized in the personality systems of individuals and in social systems made up of individuals interacting with each other and with respect to situations, both systems being subject to constraints imposed by the culture system which embraces the values, norms, symbols, beliefs, etc., that guide actors in their choice of action. At the next level, that of any one of the social systems or networks of relationships connecting interacting individuals, it is the *status role*. The functional role of an individual interacting with others in such a network is defined by what he is expected to do and usually does do in this particular set of relationships; whereas his status is defined by his position relative to those of others in this particular network. The third and highest-level fundamental unit is the *acting individual*; for, as a member of a societal system that includes a large number of social systems in many of which he is involved, each individual performs many roles, has correspondingly many statuses, and is therefore describable as "a composite bundle of statuses and roles." Between the level of status role and that of the individual viewed as such a composite bundle, Parsons suggests, an intermediate level may be inserted, that of *institution*. It refers to any plurality of interdependent roles and statuses that defines, in the light of the ruling "normative cultural standards," the actions expected of individuals who are interacting with respect to types of situations that involve socially specified rights, obligations, etc.²³

A social structure may be conceived as made up of analytically distinguishable components, at least some of which may be capable of assuming a variety of forms. These components, howsoever defined, have a subjective aspect in that they form a part of an individual's expectations, propensities, etc., and so reduce the variability of his behavior and canalize his actions. The forms which the various components may assume do not become assembled at random. Specific forms of given components may attract, repel, or be indifferent to specific forms of other components. It follows that neither the composition of a social structure, nor that of any of its components, is the product of selection at random. These components, on the contrary, include many forms of elements which comple-

²³ See Parsons, *op. cit.*, pp. 5-8, 20-26, 39-40. Parsons also identifies (*ibid.*, pp. 39-41, 96) what he calls a "collectivity." By this he means "a system of concretely interactive specific roles" such as are performed by the members of a particular family; or, as interpreted by W. J. H. Sprott, a "group of persons sharing a common set of values and capable of pursuing a common end." See Sprott, "Principia Sociologica," *British Journal of Sociology*, III (1952), 207.

ment one another. As a result the composition of given component substructures tends to be preserved. Moreover, since the social structure includes complementary types of component substructures, these reinforce one another and so tend to preserve the composition of both the social structure and its component parts.

Economic growth is affected more immediately by some social substructures than by others; its rate is relatively high or low according as the forms of the substructures exercising the most influence upon growth phenomena are comparatively conducive or nonconductive to economic growth. The favorable or the unfavorable character of this influence on economic growth tends to be re-enforced by growth-affecting influences emanating from substructures less immediately connected with growth phenomena, since, for reasons indicated, the forms of these substructures will tend to be complementary to those more immediately affecting economic growth.

While the impact of significant growth-affecting changes in the social structure is at the level of the acting individual or acting collectivities, these changes have their origin in changes at the social-structural level. As a rule, the production of significant changes in the social structure involves not a piecemeal modification of some particular substructure but a rather complete transformation of a number of components of the social structure. Such an extensive transformation is not easily produced, however, since there is no single substructural component of the social structure that always operates as an independent variable, modifications in which need but be made to produce a significant impact upon economic growth. At any given time, however, there may be strategic points in a social structure at which maneuvers calculated to produce growth-affecting changes may be effectively directed. And, in some societies at least, the state may be the instrument through which such maneuvers are made.

The social structures found among literate peoples correspond to four main types, Parsons finds: the universalistic-achievement pattern, the universalistic-ascriptive pattern, the particularistic-achievement pattern, and the particularistic-ascriptive pattern. The first of these patterns appears to be relatively most favorable to economic growth, because the action issuing from the combination of elements making up this pattern is relatively conducive to growth; the second pattern is intermediately favorable, while the last two are relatively unfavorable, the degree of favorableness in each instance depending upon the nature of the action to which the combination of elements in question gives rise. It may also be said that the manner in which the patterns differ from one another has its origin primarily in the manner in which the status roles making up any one of the patterns differ from those making up another. The types are so few in number and so different in their impact upon economic growth because, as has been noted, it is largely complementary forms of elements that tend to get assembled into a given social structure and its components and be-

cause, such an assembly having come into existence, its existence tends to be maintained by the stability-producing conditions characteristic of social systems and social structures.²⁴

The universalistic-achievement pattern, of which the American society constitutes a prime example, is so favorable to economic growth because both its component parts and the manner in which they are combined are favorable. The goals sought in such a society are plural in number, specific as to form, subject to change and expansion, and empirical in nature, or representative of the empirical. Goals vary with individuals. Individuals, actions, collectivities, etc., are effectively evaluated in terms of their specific contributions to the achievement of specific goals and in the light of universal standards. Achievement and instrumental efficiency are stressed. Status is a function of occupational role and, through it, of goal-producing power. Roles, resources, and rewards are distributed in strong conformity with the actual and/or the prospective achievements of the recipients. The occupational system, through which dominant values are given expression, is essentially independent of the kinship system, which is represented by a conjugal type of family. The occupational system, like the role system, is subject to increasing differentiation. Differentiation, in turn, is facilitated by and makes for the universal character of the norms of performance to which economic behavior is made subject. Mobility, so essential in a dynamic society, is facilitated by the ease with which the conjugal family can move and by the fact that the class system is open, as is requisite in an achievement-oriented society. Freedom of exchange and freedom of consumer choice, both requisite in an occupationally differentiated and achievement-oriented economy, exist in a marked degree. Otherworldliness, which operates to weaken achievement-oriented motivation, is subdued. While the technical apparatus of the state is well-developed, the economic role of the state is relatively limited, and the economic system enjoys considerable autonomy. The state itself is looked upon as merely an instrument through which certain goals may be achieved. The universalistic-achievement system, therefore, is individualistic and antiauthoritarian.

The universalistic-ascriptive pattern, by contrast, is collectivistic and authoritarian. The state is looked upon as the organ through which an ideal set of affairs is realized or preserved. The occupational system is highly differentiated and separated from the kinship system, yet status rather than specific achievement is stressed. For an individual's status depends largely upon his group membership, and this tends to be ascribed

²⁴ See Parsons, *op. cit.*, pp. 60-66 and chap. v; also *idem* and E. A. Shils, eds., *Toward a General Theory of Action* (Cambridge, Mass., 1951). See also G. E. Swanson, "The Approach to a General Theory of Action by Parsons and Shils," *American Sociological Review*, XVIII (April, 1953), 125-134. Illustrative of the highly selective manner in which basic social elements combine, Parsons notes, is the smallness of the number of forms assumed by kinship systems, achievement structures, political-power systems, and value systems.

rather than awarded on the basis of specific performance. In consequence individual achievement, individual aspirations, and private interests are much less highly valued than in a universalistic-achievement system. Social mobility is less great, and less importance is attached to individual freedom and to economic and other forms of autonomy. Parsons describes the past German society and, but in lesser measure, the Soviet-Russian society as representatives of the universalistic-ascriptive pattern; but they appear to be less representative of this pattern than the American society is of the universalistic-achievement pattern.

In a particularistic-achievement pattern, such as was found, Parsons believes, in classical China, there is little stress upon a generalized ideal like efficiency; the occupational system is subordinate to the kinship system, and hence much less differentiated than those found in the patterns already described. Collectivistic, authoritarian, and traditionalistic objectives take precedence over individual aims, and there is little scope for individualistic aspirations. Achievement, while stressed, consists in the attainment of position in a hierarchical structure rather than in the accomplishment of specific tasks. In this pattern, therefore, the reward system is much less nicely adjusted to differences in specific achievement than is the case in the universalistic-achievement patterns. Feudalism, together with heredity of status, was checked in China by the centralization of cultural, religious, and governmental authority; while the rise of capitalism was prevented through the control of urban centers and the absorption into the governmental system of the potential members of a capitalistic elite.

In a particularistic-ascriptive pattern kinship and local community are nuclear points of social organization just as in a particularistic-achievement pattern; but there is little emphasis upon achievement in any form or upon instrumental efficiency. Position tends to be ascribed, and traditionalism and stability are prized. The occupational system is not highly differentiated. There is little concern about issues which transcend the kinship system and the local community. The state is not strong, serving principally to preserve the stability of the system. This type of system is supposedly encountered in Latin America.²⁵

Parsons's analysis suggests that certain forms of structural elements are especially favorable to economic growth. The occupational system needs to be free of restraints such as may flow from kinship and other social substructures, and allowed to differentiate in accordance with economic criteria. Income or reward must be adjusted closely to the specific performance or value productivity of the recipients. The status of economically oriented roles must depend largely upon their value-productivity. There must be great emphasis upon material values, together with such freedom of exchange and consumer's choice as can be attained only in a fully developed money economy. The class system must be open, the

²⁵ See *Social System*, pp. 86-87, 101-114, 136, 177-200, for Parsons's account of the four systems.

population mobile, and the distribution of income neither too equal nor too unequal. The social position of the elite comprising persons performing entrepreneurial functions must rank with the highest. Presumably, general realization of these conditions would imply that the economic system, though but one of several systems comprising the societal system, had attained a high degree of autonomy. It is essential also that great stress be placed upon the development and use of basic and applied science and upon the professionalization of skilled personnel. It is important that the state be viewed as an instrument designed to maintain law and order and facilitate the realization of objectives which cannot be achieved so well otherwise. While it is essential too that otherworldly and nonempirical goals not bulk too large among those sought, it is also important that values making for social cohesion not be critically undermined.

CONCERNING THE PAPERS THAT FOLLOW

It was the purpose of the authors of the papers that follow to deal with the influence exercised upon some indices of economic growth by selected components of the social structure and particular instrumentalities of the state.

The papers of Messrs. Levy and Lockwood are of importance both because of the light they throw upon some of the factors which contributed to the remarkable economic transformation and growth that Japan underwent during the six or seven decades succeeding the Restoration of 1868 and because of the implications of Japan's experience for those interested in or guiding current efforts to disenthral populous Asia from the grip of relatively unproductive socioeconomic systems. Attention may be called to three of Mr. Levy's findings. First, the increase in social strain and deviance which tends to accompany any transition from a peasant to an industrial economy was effectively counterbalanced in Japan because there, unlike in China, there initially existed a strong system of social or collective control over the behavior of individuals. Second, there also existed in Japan a potential entrepreneurial and administrative elite capable of peopling the new roles brought into being in the course of the transition. Finally, the fact that Japan made the transition while China did not is attributable largely, Mr. Levy believes, to the manner in which the social structure of Japan differed from that of China. In both countries the merchant class supposedly was relatively lacking in prestige, while action was family-oriented. In Japan, however, the class system was closed and the sociopolitical system was essentially feudal in character, whereas in China the class system was relatively open and the sociopolitical system was comparatively nonfeudal. In consequence, in China the families of successful members of the merchant class tended to be absorbed into influential nonmercantile classes whereas in Japan merchant families, denied egress from their class, tended to augment their economic skill and power.

The Japanese merchant class could, therefore, when development was finally decided upon, furnish much-needed entrepreneurial and related skill. The feudal character of the Japanese society, together with widespread loyalty to the feudal hierarchy, helped to prevent such ascendancy of family considerations as was found in China, made possible the great sacrifices prerequisite to industrialization, and probably caused economic development to be envisaged in all-inclusive rather than in narrow mercantile terms. The influence exercised by the social-structural differences noted was reinforced by that of various other differences to which Mr. Levy calls attention.

Mr. Lockwood's account reveals how impossible it is to fit the course of a country's economic development within the framework of a simple, Procrustean model when, as was the case in Japan, this course is affected by a great variety of factors. It is evident that the contribution of the state to economic growth in Japan, though very important for several decades, diminished greatly after 1890, and in the aggregate was much smaller than is commonly supposed. After 1905 a coherent politico-economic policy no longer was evident. The experience of Japan supports the current opinion that militarism and war tend to retard rather than to foster economic growth. Often a combination of circumstances produced an effect favorable to growth: thus inflation, consumption-restricting taxes and duties, and the aspirations of the well-to-do operated together to produce a high rate of capital formation. A great deal of Mr. Lockwood's account serves to illustrate the pervasive influence of social structure upon economic growth. It is indicated, for example, that state intervention did not need to be so great because a number of factors in the social structure made possible the realization of goals which might otherwise have been sought through use of the apparatus of state. It is shown how competition operated differently in Japan than in the West. It is suggested that the unevenness with which technical progress and its costs were distributed over industry and the population had its origin partly in the nature of the social structure in the closing third of the last century. Mr. Lockwood makes it evident that because of geographical, temporal, commercial, resource-pattern, and other aspects of Japan's developmental history, her experience is generalizable in but a limited degree to underdeveloped Asiatic countries. Presumably, some uniqueness marks the course of development in every country.

The case of India differs significantly from that of Japan. Japan has always been a sovereign state; India until recently has not enjoyed political sovereignty. Japan experienced remarkable economic progress; the condition of the people of India did not improve greatly in the past century. Japan developed effective industrial leadership and a skilled labor force; India remains very short of both. Japan's social structure and state apparatus are relatively modern; those of India stand in need of considerable improvement. The two countries probably re-

semble each other most in being heavily peopled relative to their resources and in having a small-farm agricultural economy. Of fundamental importance to students of economic growth is the question: Why has India lagged so behind Japan?

Whereas the essays of Messrs. Levy and Lockwood explain in part why Japan was able to develop so rapidly, the essays of Drs. Lamb and Gadgil indicate in some measure why so little economic progress has been made in India. While Dr. Lamb is aware of the fact that the social structure of India has been unfavorable to economic growth, her concern is with the net effect of British governmental policy upon economic growth in India. She concludes that India's lack of economic development must be attributed in considerable measure to that country's having so long been politically subordinate to Britain. With political subordination went economic subordinacy. From the beginning almost until the end of British ascendancy India was looked upon as a kind of economic complement to Britain. Accordingly, the development of an economically rounded and strong India was not made a primary object of British policy, nor did it become such in the various princely states which were friendly to the British. The growth of industries compatible with India's need and resource patterns was not encouraged by protectionism, government purchasing programs, and related policies, nor was the formation of a skilled labor force and an effective entrepreneurial class stimulated. Government policies, in fact, sometimes had a contrary effect. Transportation, shipping, and banking facilities were not developed in a manner that would greatly stimulate economic growth, nor was much public revenue made available for this purpose. British capital investments, while sometimes considerable, were too small in volume to produce effects that offset those of growth-retarding policies. Dr. Lamb's paper thus serves, especially when contrasted with Mr. Lockwood's, to underscore the importance of political sovereignty as a possible stimulus to economic growth.

Dr. Gadgil describes in detail some aspects of the social and the economic structures of contemporary India. How industrial and other changes gradually are making for the monetization of India's small-farm agriculture is revealed. The impact of industrialization upon the traditional handicraftsman is outlined. It is noted that India's complement of technically competent factory workers can be increased quite rapidly because many jobs are easily mastered. The need for competition-enforcing legislation is implied. The management-agency system, of British origin, is shown to make for the concentration of economic control and for emphasis upon financial rather than upon engineering and production considerations. It is revealed finally how the caste system continues to limit the supply of entrepreneurs.

Brazil differs politically, economically, and ideologically from both Japan and India. The papers of Messrs. Spiegel, Siegel, and Stein bring out some of these differences, and among them the fact that Brazil,

having been settled much more recently, has a much more favorable population: resources ratio. Mr. Spiegel indicates that, abstracting from protectionism, the Brazilian government, even upon assuming a republican form in the 1880's, for a long time did not concern itself effectively with the development of the country's resources, and that only recently has the state acquired considerable potential power over economic affairs. Strong and weak aspects of contemporary governmental developmental policies are disclosed, as are many of the limitations to which action by a state may be subject. Many of these limitations are to be found, of course, in the social structure of contemporary Brazil, and it is to some of these, particularly those operative in less urban sectors, that Mr. Spiegel's paper calls attention. Many of the characteristics of a universalistic-achievement structure are absent, or present in only a small degree. It is possible to infer that release of the forces of economic growth presupposes a transformation of both Brazil's social structure and the dominant value-system of her well-to-do. Mr. Stein reviews in some detail the growth of the cotton-textile industry, the first to get under way (*ca.* 1845) and now the most important of Brazil's industries. His paper brings out with respect to an industry as Mr. Lockwood's does with respect to a country the variety of the circumstances that map the course of economic growth. It illustrates various ways in which the conduct of economic affairs and the growth of the textile industry have been influenced by factors peculiar to the Brazilian social structure. It points up, among other things, some of the undesirable effects of protectionism.

Social Structure and Economic Change in Brazil

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ONE OF THE great problems faced by all of the so-called underdeveloped countries of the world, irrespective of their many specific customary differences, is the great time lag between them and the advanced centers of industrial development. In so far as economic growth has become a goal value for any of them, the group is faced with instituting over a short-range period changes which were far more gradually effected in Western society. What we are interested in understanding, both from theoretical and practical points of view, are those factors in this process which inhibit and/or promote growth and affect the rate and modes of development. In this paper an attempt will be made to analyze the interrelationships of social structure and economic processes as they are involved in growth in the Brazilian scene. What the anthropologist or sociologist can contribute to these understandings is to provide what Firth terms the "contextualization of economic theory."¹

1. Following the most prevalent conception of growth we shall designate by this process the increase over time in gross or per-capita output of goods and services. Dr. Paul Baran in an analysis of methods by which such increase can occur suggests the following as the most important: utilization of previously unutilized resources, such as manpower, land, and raw materials; improvement in the mode of economic relations by more effective organization of labor, use of raw materials, etc.; and by raising technological efficiency.² The last in relatively nonindustrialized societies usually implies a basic change in industrial and agricultural techniques and energy use—i.e., a shift from handicraft to machine methods of production. Or if industrial plants and equipment as well as agricultural machinery are used on a small scale, then it means adding substantially to this stock of productive facilities, namely investment.

* Sections 8 and 9, with minor changes, were contributed by Dr. Charles Wagley. Had it been possible to submit a final draft of this paper to him for criticism and comment it should rightly be one of joint authorship.

¹ Raymond Firth, *Elements of Social Organization* (New York, 1951), p. 126.

² Unpublished paper.

Assuming that this analysis is acceptable to most economists working in the field, we might profitably examine in more general terms certain important aspects of social structures related to such changes, before proceeding to a specific consideration of social factors in Brazil.

2. The system of social alignments in any society provides clues as to *who* gets and gives *what*, and *when*. That is, it specifies the privileges and responsibilities of the expectations associated with social positions. It also suggests *how*, culturally, values, activities, and objects are shaped and enjoyed (shared) among societal personnel. In so far as interaction is thus organized it can best be represented as an equilibrium of opposed tendencies. In this conception of a *modus vivendi*, the parties to the relationships may be very accepting of their roles and make their ties enduring, despite great differences in prestige which may be attached to their respective offices. As long as opposing tendencies or some new force does not disrupt the traditional behavior patterns the system will tend to retain its form.

An equilibrium of social forces so conceived may be one in which there is a relatively infrequent or frequent change in social position. That is, individuals may or may not have the choice of learning those skills and acquiring that knowledge requisite to the assumption of a new status. If not, then their life chances, so to speak, tend to be frozen, and in societies of this sort the roles that persons play are determined more by *who* a person is than by *what* he is.

If an individual in a position to organize available resources more efficiently, or to invest surplus (savings) into raising technological efficiency does not do so, this in part is due to the fact that he does not expect that such behavior would add to the satisfactions accruing to his customary role playing. The acquisition of relatively great wealth may entail the enjoyment of corresponding high prestige and exercise of power in terms of how that wealth is used. In one case, for example, the individual who acquires such a favorable relation to the ownership of wealth will be deferred to in proportion to his successful investment in more productive techniques; but in another, in proportion to his display of appropriate symbols of wealth. The two are not mutually exclusive, but emphasis will vary.

Similarly we might expect from an analysis of alignments that an interest in modifying prevailing modes of production and exchange (including the development of a more efficient utilization of resources) would vary inversely with the stability of the patterning of role relations and the degree of common acceptance of supporting values. Successful or unchallenged behavior habits are likely to be extinguished only by changes in the environmental situation which render previous habits unworkable. "Dilemmas facilitate learning."⁸

⁸ John Dollard and Neal Miller, *Personality and Psychotherapy* (New York, 1950), p. 50.

One other aspect of social organization which bears directly upon the stability of economic relations, and hence upon growth factors, is the phenomenon of class differentiation. Conceptions and definitions of class have been varied and at variance with one another, but the concept has nevertheless proved a useful tool for the description of certain kinds of behavior and prediction of life-chances of individuals. Moreover, there is complete consensus in the conception that classes represent aggregates and groups of individuals who are ranked in accordance with their relationship to culturally valued objects and events. For our purposes, then, class membership can be adequately described by defining class as an *aggregate and/or group of persons who bear a similar relation to the shaping and sharing of one or more values*. To the extent that wealth is a value, for example, there may be economic classes delimited with reference to the ownership of wealth or opportunities for participating in activities that lead to the acquiring of wealth and wealth symbols. In Brazil land rather than money is the dominant wealth symbol, although in more industrialized areas money is coming to compete with it. Among larger national entities the ability to exercise influence, to make decisions (i.e., power) is also a value, and may be closely related to wealth. That is to say, persons may use wealth to seek power, or vice versa. When the national class structure revolves about wealth and power as key values it tends to be equated with politico-economic classes.

Regional prestige hierarchies and national class systems reflect the mode and degree of social participation. In many underdeveloped countries opportunities for changing class membership among native inhabitants have been altered only slightly from the past. The symbols of elite membership (viz., land ownership and lavish self-indulgence), and attitudes associated with them, therefore similarly reveal basic continuities. To the extent to which the class system exhibits these characteristics we can expect to find a corresponding reluctance of the elite to develop those skills or to institute the organizational changes requisite for industrial development.

The nature of the customary behavior associated with role playing in the system of social alignments is thus linked in a real way with entrepreneurship and social incentives for or against changing prevailing patterns of exploitation, modes of socioeconomic relations, and private investment. In the underdeveloped countries represented at this conference, external rather than internal pressures have provided much of the stimulus for change in patterns of relationship and in an increasing emphasis upon the values of growth and "progress." These pressures include the consequences of fluctuating world markets and world trade; foreign investment, introducing new and more effective techniques; and (in Brazil for example) immigration, with the consequent importation of new values, a varied emphasis upon the old (viz., increased value placed upon commercialism), and a perceptible tendency to alter traditional role relations, to

see new opportunities in old and newly established localities alike, where immigrants have come to settle.

With these introductory remarks we can proceed to the examination of certain salient features of social structure in Brazil and their relation to economic change.

3. In view of the virtual absence of systematic analyses of urban centers in Brazil, primary attention will be paid to the rural population. Although we possess several good studies of the sociocultural dynamics of plantation life from an earlier epoch in northeastern Brazil, there are no comparative studies of contemporary social systems among the various types of plantations, new and old, of aristocratic and recent immigrant origins, in the South as well as the North, etc. Cotton and coffee holdings, to cite two outstanding cases, still contribute in a very important way to the national economic structure, but no empirical field studies of their social and cultural subsystems have been undertaken. Nevertheless there is available a growing body of reliable data concerning the rural peoples of Brazil, the environmental and social contexts of their behavior and cultural modes of belief, practice, and valuation. All of these considerations are germane to economic factors of productivity.

Despite a few metropolitan and even rather spectacular urban centers on or near the coast of Brazil, by far the greater part of its population must be characterized as rural.⁴ Even many nuclei listed in the census as "towns" or "cities" constitute merely administrative centers, in some more sparsely settled regions consisting of as few as a hundred inhabitants or less. Only a handful of communities have a population of over 50,000. As a result of a number of circumstances an exceptional concentration of population in cities has occurred within the last few decades, but with very little shading off from urban to suburban zones. Thus the city of São Paulo has over 99 per cent of its inhabitants densely concentrated within the urban perimeter, a situation typical of the few other major cities. Less than ten miles from the commercial center one suddenly enters into open farm and forest country.

What is equally important is that the lack of good transportation facilities has prevented innovations in the more rapidly changing urban centers from penetrating far or rapidly into even the immediately adjacent territory. Despite the many changes that have taken place over the years in the emphasis on crops grown primarily for export, in the importance of extractive industries, the diversification of crops, and modes of social relations since the days of slavery, the form of social life among the great majority of rural dwellers is cast into a mold that shows a tenacious continuity with the Brazil of more than two centuries ago. Methods of

⁴ It is worth noting, however, that between 1920 and 1940 it has been estimated that the proportion of persons working in agriculture has been reduced from 72.6 to 67.5 per cent. See *Economic Survey of Latin America 1949* (Department of Economic Affairs, United Nations, 1951), p. 200.

farming vary locally, and in places involve the use of adequate fertilization, mechanical aids, and soil-conservation techniques. But even in the technologically advanced state of São Paulo these methods contrast markedly with the typical cut-and-burn or clearing techniques. Illiteracy and isolation from the main centers of urban innovation combine to erect mental barriers of formidable dimensions to the diffusion of patterns of, e.g., greater rationality as an important component of behavior.

4. If by an industrialized society we mean one in which the members utilize (1) an advanced technology and (2) primarily nonhuman or animal sources of power in economic processes, then Brazil must be characterized as essentially a nonindustrialized society. This statement must be qualified, and the qualifications are important.

In the south of Brazil there has been some development and expansion of modern industry with a great concentration in São Paulo. There in 1940 were located almost 30 per cent of all plants, almost 45 per cent of capital investment, and about 35 per cent of all persons engaged in industrial activity. Further examination would probably disclose that an equally great, or greater, proportion of mechanized and scientifically based agricultural methods is centered in this state. Here and in other sections where industry has made even modest inroads the demand for labor has become one factor in the movement of rural dwellers to the city. Another motivating factor in this movement is the capricious fluctuation—in the eyes of the rustic farmer—of prices for food products that are raised in surplus quantities for urban consumption. Among small-scale farmers agriculture, in so far as it is not completely of the subsistence type, has become a precarious way of life. This is certainly true of the state of São Paulo and, judging from continuing migrations from the Northeast to the South, true to some extent of that region as well. That these individuals do not often find what they want or in a confused way expect in the towns and cities is beside the point. Among the rural population as a whole the number of persons who have moved toward industrial centers over the past three decades is small but unmistakable. There is no reliable statistic. In the states of São Paulo and Rio de Janeiro, however, this movement has been sufficient to constitute a problem: rapidly expanding urban centers (few in number, to be sure) and a corresponding decrease in agricultural production upon which the city dwellers are largely dependent. If we use the concept of equilibrium to describe the balance of forces that results in the form of a social system at any time, then it is apparent that there are strains that threaten to alter that system in rural southern Brazil at the present time. Chapters of national and regional political parties, buses and trucks, and coastwise navigation, markets, and representatives of federal and state social-service agencies (however few and inadequate) are some of the available, albeit narrow, pipelines that contribute to this process of change.

Granted the dynamics of the situation, the basic structural elements

and relations of rural Brazilian societies have not departed radically from an earlier day. The master-slave relation no longer exists, but the social distance between the upper and lower classes is very great, and is characterized by little social permeability upward or surplus output downward. At this point, therefore, we can profitably examine these social systems with special reference to their interrelationship with relevant economic factors. In the following sections remarks will be largely confined to the state of São Paulo, which is also the center of most rapid industrial development. We shall then proceed to evaluate more briefly the key relations in other regions and their significance for economic development.

5. A typical landscape in the hinterland of the city of São Paulo consists of open country—alternating hills and valleys—dotted with farms of medium and small dimensions, and occasionally with a plantation. Here and there are forests, seldom virgin any longer, important primarily as a source of firewood and charcoal. The demands of the metropolis for these products has recently converted one *município* from a dependence based primarily upon agriculture to one based primarily upon extraction, after the advent of improved means of transportation that made São Paulo less than an hour distant by truck. Pierson reports that the inhabitants of a *município* more isolated but in many important respects comparable to the former also began to take extensive advantage of these resources after about 1928.⁵ Here, although the industry was facilitated by the presence of a nearby railway to São Paulo, it has not reached the proportions of the closer center.

The main roads infrequently pass by a solitary store or two, which serve coffee, drinks, and offer a small assortment of other goods. They are as much congregating points for the informally organized diffuse neighborhoods as they are commercial enterprises. Population nuclei—villages, towns—are to be found rarely, however, with one principal administrative center and perhaps as few as one or two other small compact settlements in a *município*. Thus in one *município* in the Paraíba Valley of the state of São Paulo, with a total population of about 27,000, less than 1500 live in the seat. Besides that village there is only one other settlement of 30 houses, the dwellers being exclusively agriculturalists and pastoralists and hence lacking the occupational diversity of the main center.⁶ In another *município* about 20 kilometers from the state capital the seat has a population of about 750 out of a total population of roughly 14,000. There are in addition two other much smaller and less diversified settlements that minister primarily to the restricted commercial (and to a lesser extent, recreational and religious) requirements of more isolated farm dwellers. Here and there historical factors may have been respon-

⁵ Donald Pierson and others, *Cruz Das Almas: A Brazilian Village* (Washington, 1951), p. 35.

⁶ Emilio Willems, *Cunha: Tradição e Transição em uma Cultura Rural do Brasil* (1947), pp. 16-18.

sible for a less marked disparity between open country habitation and settlements, but this is not typical either of the state or of Brazil as a whole.⁷

The western part of the state and northern Paraná bordering it are the regions of intensive coffee and cotton cultivation at the present time. Consequently there are fewer small farms (*sítios*) and characteristically large latifundia. Everywhere, however, there is a great preponderance of individuals and families who either own such a small amount of land that they cannot completely, or are just barely able, to sustain themselves from working it; or they are landless and enter into one of several possible relationships with landowners and other employers. Inheritance rules which favor the division of property equally among the children of the deceased have intensified the problem of subsistence for the small farmer.

From these remarks it is clear that one of the most important social statuses in Brazilian society consists of being a nonliterate small landholding (often landless) rural inhabitant. In terms of sheer numbers this category of persons, generally referred to as *caboclos*,⁸ is the dominant human resource. Their culture constitutes a rather well marked subsystem, but they are not formally segregated by occupation, marriage, or other criteria from occupants of other positions. The traditional relations which they maintain with others reflect a good deal of their level of aspiration and opportunities for sharing national key values. We shall consider next, therefore, certain distinguishing features of *caboclo* social life.

6. Cutting across regional differences, *caboclos* have been most generally described as "non-literate and relatively isolated descendants of more or less assimilated Indians, mixed, in varying degrees, with Europeans and (in certain areas) Africans, and inhabiting the rural areas between the coast belt and the westernmost point of settlement, from Rio Grande do Sul to Amazonas, and known by different names in different areas."⁹ Again, speaking generally, the Brazilian rustic is said to have high spatial mobility (he is nevertheless very provincial); to be economically largely self-sufficient, hence to engage very little in monetary commercial relations; to rank lowest among economic and prestige classes; to live in scattered settlements. Their status as illiterates also affects very much their ability to share most other values, such as power and wealth, even on a local diminished level.

The local identification of the *caboclo* is typically circumscribed by the

⁷ See Lucila Herrman, *Evolução da Estrutura Social de Guaratinguetá num Período de Trezentos Anos* (Revista de Administração, Nos. 5-6, 1948), p. 214. The author reports a somewhat greater percentage of town dwellers than country dwellers as of 1940, which represents a major shift in the course of one century.

⁸ The regional equivalent of this term in the state of São Paulo is *caipira*.

⁹ D. Pierson and Mario Wagner Vieira da Cunha, "Research and Research Possibilities in Brazil with Particular Reference to Culture and Cultural Change," *Acta Americana*, V, 18-83.

neighborhood (*bairro*) or the hamlet (*arraial*). Here reside his friends and kinsmen whose assistance he can request for certain kinds of co-operative labor, viz., harvesting and housebuilding, so characteristic of peasant societies in many parts of the world. Only occasionally does he carry on effective social relations within a larger political unit, the *município* (roughly similar to our county). Except for those who have migrated to cities, the *caboclo* has little knowledge of state or national affiliations. I once met a rustic who knew the names of neither the state governor nor the president of the Republic, although he had heard of President Truman and the Point IV Program!

These intensive local identifications of the *caboclo* are not a result of frontier life, although many do live in the vast interior. It is much more a function of mental isolation. Many rustics live very near densely settled towns and cities of the coast and *Planalto*, as well as in villages and traditionally established neighborhoods. The widespread notion of migratory tendencies of the *caboclo* is not well documented. The attraction of certain cities in the South and of the sugar-plantation corporations in the northeastern littoral have been important in recent years. To the present time, however, they have probably involved a small fraction of the rural population. Most movement for the average *caboclo* is confined to trips to local markets (occasionally to city markets if they are not too distant) and to better clearings when these are available. In some places also seasonal migration will take a man away from his more-or-less permanent neighborhood to work on roads or other public works involving unskilled labor, on banana plantations, etc. When he has acquired enough cash to supplement other subsistence activities for the year he will return. Even migration from the Northeast to São Paulo in the South is often seasonal. Of great interest in this regard is the observation that inhabitants of a single neighborhood or hamlet will often travel together to work for a certain period of time in a given enterprise in the country or in the city. On such occasions they maintain patterns of group co-operation and leadership.¹⁰ During the eleven months which the writer spent in a *município* adjacent to that of São Paulo he encountered six persons who came individually from northeastern states. Their first means of becoming oriented was to seek out a relative, friend, or friend of a friend from their local *bairro* or *município*.

The *caboclo* family is typically nuclear or independent. Its size varies with ethnic background—families of Syrian and Italian background tend to be rather large, as do those of a great many other *caboclos* despite a high rate of infant mortality. It is sometimes augmented by an occasional godchild or even married sons and their families, but this is rare.

Among families who live in fields in the country the role expectations of children are different from those that live in settlements. All children

¹⁰ T. Lynn Smith, *Brazil: Its People and Institutions* (Baton Rouge, La., 1947), p. 333.

experience considerable indulgence during infancy and up to the seventh or eighth year. On farms, however, children after that time can contribute to an important degree economically. A ten-year-old son's contribution to an agricultural field-labor supply has been reckoned as high as one-half an adult's. The techniques are not difficult to master, and are generally assumed according to physical preparedness. This means that very few boys or girls (there is no adequate calculation) are encouraged to go to school, and certainly not beyond the minimum four grades required, but not rigidly enforced, by law. Consequently they lack the opportunity to acquire those skills which are stepping stones to social levels other than that which is traditionally the *caboclo's*. This fact is extremely important to bear in mind. Part of the problems involved in the economic development of Brazil have been laid to an inadequate educational system. Facilities are inadequate, there are too few well-trained teachers, available students, etc. On the other hand, a great pool of potential talent is left untapped because of the inaccessibility of individuals to available resources.

Children of village dwellers are in a different situation among both *caboclo* families and those in more favorable economic and prestige positions. They can contribute in a minor way to family productive activities. At a somewhat later age girls particularly may work as servants to be paid in food or clothing, less frequently in wages. Usually, however, parents are hard put to keep them off the streets, which in view of the ideal of strict surveillance imposes considerable tension. By the time they are ready to work for a living many youths must seek employment elsewhere, often as agricultural laborers in other *municípios*, sometimes as unskilled laborers in the factories of São Paulo or some other city. Those who remain tend to follow the subsistence activities of their parents. The gradual extension of a network of buses has provided a new source of wage-work as drivers and drivers' assistants, but with little opportunity for advancement.

While it is true that the *caboclo* stands in an unfavorable position in relation to values which he shares with others, it is equally true that his culture is set apart symbolically and in terms of stoically accepted life chances. His speech habits, house, deference patterns towards others, lack of participation in political activities, to name a few distinguishing characteristics, circumscribe his social world. Occasionally individuals by marriage or frugal accumulation and good fortune manage to move into other groups, but this has hardly made a dent into the prevailing form of *caboclo* social life.

Another set of important structural relationships among Brazilians as a whole, but especially marked among rural inhabitants, is that between godparents and between godparents and godchildren. This institution is known in Brazil as *compadresco*. As in other parts of Latin America godparent relations are patterned after kinship relations within the family.

During the course of baptism, confirmation, and marriage an individual may acquire a great many godparents, and in so doing establish equally important ties between parents and godparents. The status relation between godparent and godchild is characterized not only by respect and authority, but also by a number of other rights and duties that make the former surrogate parents. Among the godparents and parents this relationship functions also in another way, namely, by establishing commercial relations. In the village where the writer carried on field work, for example, recent immigrants often fit this pattern into their own adjustments to distinct advantage. Two Japanese and a few Syrians, well-known and respected, sponsored scores of godchildren, thereby assuring themselves of a steady clientele in their respective businesses with the parents of the godchildren. *Compadresco* is related thus to two aspects of the Brazilian social structure: (1) the tendency to establish strong local identifications even by immigrants, and (2) the personal, intimate, and informal nature of most commercial relations.

The economic status of the *caboclo* is really a composite one which, in the case of a man, consists of his role as principal provider for the family either in farm work or in some other work, being poor, and being in one of several employee positions involving in most instances work with one's hands. The writer encountered one *caboclo* who owned a large coffee plantation about two hundred kilometers west of the city of São Paulo. A combination of some luck, saving and buying land over the course of years, the help of several sons who together with himself did most of the work, and then the coffee boom made him a fairly rich man. He is an exception. Even so his values and way of life are clearly distinguishable from those of the hereditary large landowner. He continues to eat customary *caboclo* fare, to dress simply, and in general does not utilize his surplus products or wealth on consumption for prestige purposes.

Caboclos invariably rank lowest in the economic and prestige classes. Most of them are farmers, either working on shares from the owner (this rent may amount to one-fourth of the yearly crop), paying so much per year for the right to pasture cattle, or working as hired hands. In the more settled areas where there is little free (untitled) land the *caboclo* works on a somewhat formal basis, setting up a crude wattle and daub house for himself and family and contracting to give so many days' work in the proprietor's fields, tending his cattle, or on some other enterprise, in return for being able to use certain lands for himself. This is known as working *de agregado*. Often, particularly in the state of São Paulo, a man will enter a wage-work agreement with a farmer who owns his land. Wage workers of this sort are called *camaradas*. Still others divide their energies, working for most subsistence requirements as an *agregado* (there are other terms to describe this arrangement, *arrendatário* and *meeiro*), and also hiring out as a *camarada* in order to acquire a little cash. The *camarada* does not live on the farm or plantation of his employer, often renting nowadays a house in the hamlet or village.

In the latter there are opportunities for the rustic to diversify his productive activities. The few population centers serve a large region, and there are consequently many commercial establishments carrying foodstuffs, hardware, baked goods, dry goods, textiles, and other commodities, depending upon the importance of the center. The *município* seat which the writer knows most intimately contained almost forty establishments, although the village population was little over seven hundred. (This contrasts sharply with the general store and perhaps a few other shops in an American village of comparable size!) Some eight of these, including two small bars, a shoe repair shop, and two barber shops, belonged to *caboclos*. The rest were larger and did considerably more business. None of the poorer establishments provided more than subsistence living, judged in the light of *caboclo* standards in this region.

This being the administrative center of the *município*, a few rustics also are employed in menial, low-paid capacities by the local prefecture. There are, for example, a street cleaner, a janitor, and a varying number of unskilled laborers who are paid by the day on public-works projects (ditch digging, road repairs, etc.) from time to time. They usually have some employment although theirs is a more precarious situation.

Caboclos who live in the *Planalto* region of southern Brazil, being closer to urban and metropolitan centers, have been drawn to an increasing degree into contract relations and a dependence upon the use of money as a common measure of the value of goods and services. It is in this region also that there is little free land suitable for cultivation or pasturage, and where small tracts have been made even smaller (for some, ultimately nonexistent) as a result of the prevailing system of inheritance. Here the *camarada* system is perhaps highest developed of any region. The greater variety of commodities available has expanded the material wants of individuals, and there is a greater variety of services which they can render: carpentering, brick making and laying, truck driving, loading and unloading, grave digging, road working, blacksmithing, housework, clothes washing, and shoe repairing, to mention the most important. All of these services are repaid in large measure by money, although barter relations continue on to some degree.

In the rural South, to put it briefly, the *caboclo* has more frequent contact with others, and these relations have a less intimate, informal, folklike quality than they do in Amazonas or the Northeast. Nevertheless the status of *caboclo* involves the assumption of certain values that basically affect the way the individual conceives his role, the decisions he makes about what kind and how much work to do, how to utilize the products of his labor, the education of, and aspirations for, his children, and the like. In general he lacks the notion of progress. His level of wants has been for so long constrained within such narrow limits that he seldom considers it a likely alternative to strive beyond traditional goals, to compete with others, for example, for a very limited number of higher eco-

conomic class positions. When he works for more cash and is able to purchase more commodities, the *caboclo* will adjust his sights to the new level, but he does not think in terms of continuous accumulation. The status values of those young men who must leave home in search of jobs probably are changing in this regard. But as long as social participation continues to be based upon status characteristics defined by birth instead of the unfolding of individual abilities and potentials, there will be little opportunity for those values to be translated into actual changing behavior patterns.

In this regard it is of interest to note certain observations which the writer made concerning the categories of individuals who participated in newly valued activities and seized new opportunities for acquiring wealth in the *município* close to São Paulo mentioned above. Less than fifteen years ago the principal productive activities centered upon small-scale agriculture. Then transportation improvements were made that facilitated travel to the city, cutting down the time it took to make a single round trip from an entire day to a matter of two hours. As a consequence the cutting of firewood and the manufacture of charcoal, which were formerly minor industries, boomed almost overnight, to the detriment of subsistence farming. Land formerly devoted almost exclusively to raising agricultural products now was planted with fast-growing eucalyptus, and already wooded sections, which had formerly been utilized on a small scale, were now exploited extensively. Some persons became wealthy enough to purchase new American automobiles: all of the entrepreneurs bought trucks, remodeled homes or built new ones, hired a varying number of employees for the operations, and sought political power and influence in the *município*.

Of the roughly 8 per cent of family heads in the *município* district seat who became successful in this way only one could be classified as a *caboclo*, and his history was not entirely clear. There were several whose family lines reached back many generations and had always been of high prestige. The remainder were immigrants or children of immigrants—Italian, Syrian, Portuguese, Spanish—or members of a small but flourishing Protestant sect (the *Evangelistas*) which prides itself on the literacy, frugality, and enterprise of its members. Almost all of the recent settlers were as poor as the *caboclos* when they arrived. They managed to see new alternatives when they arose, to buy up small plots of land and gradually increase their holdings, mostly at the expense of the *caboclos*. The social-psychological factors of immigration and the personality types of immigrants are germane to this discussion, although we cannot go into them in this paper. It is worth suggesting for further testing, however, the proposition that *participation in newly valued activities among members of low economic and prestige classes varies inversely with length of residence in a locality*. Old settlers at depressed levels have inherited habits of belief, a morality, and expectations of role rights and obligations associated with their statuses—in short, have accommodated themselves so long to

the lowest rank on a scale of deference and well-being values—that they are only slowly adaptable in the presence of altered opportunities. One of the most striking occurrences in the changing situation within the *município* under consideration is the fact that several *caboclos* sold or were seeking to sell their properties to prospective entrepreneurs, and then turned around and hired their labor out for wages.

7. In addition to the *caboclos*, and apart from the large plantation owners in the interior, there is a small percentage of town dwellers—small-scale entrepreneurs and small landowners. All of them outrank the *caboclo* in the scale of deference values, and share more in the values associated with urban centers. They are, incidentally, all literate. With few exceptions also they participate directly or indirectly in the political affairs of the *município*.

Unlike the *caboclos*, upper-class adult men engage in a much greater variety of social contacts and participate in more groups. They comprise membership of important religious associations; they run recreational clubs with headquarters in town; they have organized and run agricultural co-operatives in several centers; and, depending upon the distance from São Paulo, they have rather frequent urban contacts, both commercial and political. For them development is a value, and they share, albeit in a small way, in the increase in production of consumer goods and the provision of more services.

This literate component of the rural population is relatively small, and contains persons of a variety of ethnic statuses: Italian, Spanish, German, Syrian, Portuguese, and old respected Luso-Brazilian families. The Japanese, who are for the most part successful truck farmers, should be included here also, although adult men are, so far, deviant in that they do not seek to engage in political activities. A number of Syrians, on the other hand, who are not yet citizens and therefore are not entitled to vote or hold office, nevertheless are called into club councils and have considerable influence as a result of their economic-class position. This group does act to some degree in accordance with a conception of progress and the desire to maximize values such as wealth and power. In comparison with Brazil as a whole they must be said to participate in a localized scaling of these and other national values. They are not, nor do they have relations with, the owners of latifundia further in the interior, or with the small but growing number of urban industrialists, bankers, politicians, and professional elite.

8. Relative to other nations of comparable territorial expanse, Brazil is in one sense remarkably homogeneous in culture. Throughout the entire length of this vast country one language is spoken except by a few small minority groups and by an insignificant number of tribal Indians. Throughout the entire country, the domination by the Portuguese in the colonial period assured the country of a common set of formal institutions, as well as common attitudes and values which are recognized as “traditionally

Brazilian" from the Amazon in the North to Rio Grande do Sul in the South. Thus, much of what might be said about the rural communities in São Paulo is in general true of most of Brazil, and the distinguishing features mentioned for the *caboclo* apply to most rural peasants of Brazil.

Yet Brazil as a political entity is loosely organized and is a nation of marked regional differences. Various observers have differed somewhat as to the exact outlines of Brazilian regions, mainly because the criteria used are in keeping with the problems to be studied by their various disciplines. Despite such differences in detail, there has been general agreement upon such broad divisions as the Amazon Valley, the arid northeastern semi-desert, the northeastern coastal region, the semitemperate extreme South, and the frontier regions of the West. Each of these regions is inhabited by characteristic variants of the simple rural type whom we have called generically the *caboclo*. In the Amazon Valley there is the collector of native products of the tropical forest, such as rubber, Brazil nuts, and palm nuts. In the arid northeastern region, there is the *vaqueiro* (the northeastern cowboy) who is a combination of cowboy, working on shares with the ranch owner, and subsistence farmer. In the old plantation region of the Northeast, there are the plantation wage laborers tied to the plantation by economic dependence and tradition. In the extreme South, there are the numerous farmers of European origin, who generally own their small holdings and on which they practice a mixed and varied agriculture. Each of these rural types (and there are many more, such as the *garimpero*, or placer miner; the workers in the maté forests of Mato Grosso, Paraná, and Santa Catarina; the gaucho [cowboy] of the southern *pampa*, and many others) is a regional variation of the rural *caboclo* of Brazil. Each has a status in a traditional set of interpersonal relationships whose structure is determined by the nature of the economic activity to which he is devoted. The form which these take varies from region to region and from economic activity to activity. All of them ought to be taken into account also in considering economic growth and economic changes in Brazilian society.

Two examples selected from among the many different structural arrangements which may be found throughout rural Brazil should make this point clear. The predominant economic activity of the Amazon Valley has always been the collection for export of native forest products. The great rubber boom lasting until 1912, based upon the collection of wild hevea, is well known. In addition, Brazil nuts, timbo vine (used for insecticides), various palm nuts, animal skins, and native hardwoods have supplanted rubber from time to time as products sought for export. In the Amazon this extractive industry has given rise to a unique constellation of social and economic institutions, involving the great export houses in Belém and Manaus and the thousands of rural collectors scattered throughout the valley. A traditional system of credit advances forms the basis of this socioeconomic structure. The city exporters, the so-called *aviadores*,

send out merchandise on consignment to their customers, the so-called *seringalistas*, who are owners of isolated trading posts and of the surrounding rubber forests. These trading-post owners in turn extend credit to their collectors, called *seringueiros*, in the form of merchandise, food, and necessary equipment. On the one hand, the collector is expected to sell his product to the trading post which provides him with these necessities, and on the other hand, the trading post is expected to deal only with the city company from which it has received credit.

Furthermore, the relationships among exporter, trader, and collector are not purely economic. Frequently, the only form of communication with the city for the trader is the river boat owned by the export company; the boat brings his mail, and on the company boat the trader and his family travel back and forth from the city. The export company acts as the trader's city agent and his bank—when a trader's son goes to study in Belém, the company gives the boy a monthly allowance and pays his bills; when his wife is sick, the export company takes her to a doctor, pays the bill, and regularly sends her medicine by their boat after she returns. Similarly, the trader and the collectors have highly personalized relations. In order to live near their rubber trails, Amazon collectors tend to live scattered and dispersed up and down the tributaries of the Amazon river system. The trading post, situated generally at the mouth of a tributary on a mainstream, forms the center, so to speak, of a rural neighborhood. It is at the trading post that the collectors congregate each fifteen days or so to exchange news of their neighborhood. At the trading posts there are occasional dances—on the owners' birthdays and on a saint's day. Collectors are likely to be tied to the trader by *compadresco* relations (i.e., they invite him and his wife to serve as godparents to their child), and they are his political electorate.

Such relations are not always smooth, for there is considerable conflict between the exporter and the trader, and between the trader and his customers, since each in turn consistently profits heavily from the other. Moreover, the structural relationships involved in the rubber extraction are traditional social patterns which were extended to other rural situations even after the wild-rubber industry became relatively decadent and unprofitable. The collection of Brazil nuts, palm nuts, timbo, and other forest products is organized by the same system, and even small farmers producing manioc market their produce in this way. The force and tenacity of this exporter-trader-collector relationship throughout the valley have acted as a barrier to economic change; attempts to market products or to organize productive units by other means have run up against these old economic and social ties which took form during the rubber boom and have persisted into the present.¹¹

¹¹ The data on the Amazon is based upon research in a Brazilian Amazon community undertaken by Dr. Wagley in 1948. A monograph on this community is now being prepared for publication under the title of "Amazon Town."

Likewise, structural relationships which exist in numerous Brazilian plantations are closely related to the process of economic change. The highly personalized relationships on the Brazilian sugar plantations which have been described by Gilberto Freyre¹² and other social historians did not end with the abolition of slavery. Since that time, in many areas of the northeastern coast region, large commercial corporations have purchased the old family sugar estates and have grouped them into one big holding feeding into a large industrialized sugar mill (the *usina*). Yet, they have in some regions continued to operate each "plantation" as a unit in charge of an administrator who is an employee of the corporation. On such plantations, the workers are wage-earners comparable to industrial workers in any large industry. But in many parts of the Northeast, the family fazenda still persists, though it has been modified by a new relationship to the market. Family-owned and administered fazendas no longer manufacture their own sugar. In former times each fazenda had its *engenho*, as the small mills which were the center of the plantation were called.

Now, the family fazenda grows only the sugar cane which it furnishes on contract to a nearby industrial mill; many of these family fazendas are tied to the industrialized *usina* by credit advances made for purposes of paying wages and other operating expenditures from one harvest to another. On these family fazendas, however, the relations between the various types of workers and between workers and the owners forms a constellation of interpersonal relations which are at once traditional, personal, and economic. Most of the permanent workers on such plantations either were born on the same plantation or on a neighboring one and most of them have worked with sugar cane or in related occupations all their lives. Even the common field hands on such plantations feel themselves superior to the *caatingueiros*, the migrant laborers from the arid *sertão* (hinterland) who come to work for the period of the harvest, because they are more skilled at the various tasks of sugar production. In turn, the field hands are considered inferior by the carpenter and other more highly skilled artisans who work in the *barracão* (shed) at the repair and maintenance of equipment. All of these workers are inferior in rank to the *feitor* (foreman) and to an *administrador* (administrator), if one exists on the plantation—men who may be recognized by their umbrella, their felt hat, their khaki clothing, and by the fact that they are always mounted. These men are almost of a higher social class. They have higher salaries and the possibility of some day owning a piece of land on which sugar cane is grown.

Between these various groups on a family fazenda, there is an intricate pattern of social relations. The field hands are relatives and are tied to each other by *compadresco* relations and by friendship. They are tied to the fazenda owners by a set of paternalistic and personal relations

¹² See *The Masters and the Slaves* (New York, 1946).

that continue through life. When an owner returns from a visit to the city, he or his wife brings medicine for a worker or his family. The wives of workers pay a call on the owner's wife (they seldom take a chair), and she asks about their children (all of whom she knows by name) and they ask about her relatives living in the city and about the children who are away at school. Though their relationship with the owner is a commercial one and though strong class differences are involved, it is also "personal, intimate, and informal" as most commercial relations have been described above (p. 403).

This constellation of structural relationships traditional to the sugar plantation is changing in Brazil today. At the same time, it is both shaping and retarding the emergence of new economic and social relationships. On the modern, industrialized plantations and mills these traditional employee-employer relations conflict with the impersonal nature of large-scale capitalistic enterprise. Before these large enterprises come fully under the scope of Brazil's labor laws, there is a period of disfunction when the employee is protected neither by the old traditional nor the new legal patterns. Frequent labor problems ensue.

When the old system is still intact, it can act as a barrier to another kind of change. Consider, for example, the difficulties which the owner of a family sugar fazenda faced who tried to shift from sugar production to another crop which would have been more lucrative. First, he himself explained, there was a barrier in his relationship to the *usina* and to the local bank. The officials of the small corporation owning the *usina* with which he has a contract to furnish cane were anxious for him to continue as a cane producer. The bank, while willing to furnish credit for sugar-cane production, was not willing to do so for his other crop. "We know the sugar business," the bank directors reminded him, whereas his new crop was still but an uncertain potentiality. In addition he encountered a barrier in the values of his own fellow-producers in his own social stratum. Sugar planting is "a noble profession," the occupation of their illustrious forebears, and the "only crop our land will bear." It was degrading and somewhat ludicrous, they thought, for a man to be producer of bananas, of vegetables, or of white cacao. And then he had the resistance of his workers to contend with; they knew their jobs in sugar-cane production and they were uncomfortable working with a new crop. Even to them sugar cane was a "noble crop" with a higher aura of prestige than any other. Some of them threatened to leave to work elsewhere with sugar cane, which they understood, and many did leave. One informant summed up the situation with the remark: "There is a real sugar-cane psychosis in this region."¹³

Throughout rural Brazil, there are traditional structural relationships

¹³ The data for the "family-owned fazenda" is taken from a community study now being prepared for publication which was carried out by Harry W. Hutchinson in the Bahia Recôncavo area in 1950/51.

similar to those described for the Amazon Valley and for the family-owned plantations of the northeastern coast. There is the set of social and economic patterns which determine the relationship of the *vaqueiro*, the northeastern cowboy, to the ranch owner; the patterns linking the *garimpero* to the merchant and diamond buyer, and the *camarada* system of the plateau region of southern Brazil described earlier (p. 397). Everywhere these traditional relationships are now in a process of change as transportation and communications are improved, as new cash crops appear, as new business and industrial enterprises are established, and as the influence of formal governmental controls extends out from the coastal cities over the rural scene. The economic changes which are taking place in Brazil will call for modifications in these structural relationships, but they will continue to exert their influence on new rearrangements of Brazilian society for some time to come. All of these various regional arrangements are, broadly speaking, similar; they are the remnants of semifeudal sharecropping or debt-peonage systems which have provided the labor force for traditional rural economic activities which are now being supplanted, especially in those regions such as São Paulo where economic change is taking place with great rapidity.

9. Although we cannot draw upon empirical studies of urban centers or of interregional relationships and national patterns and values, it is nevertheless desirable to place our discussion of the rural subgroups into proper context and perspective. In order to do this in a tentative way we can make use of the observations submitted by social historians, economists, demographers, political scientists, and other specialists whose research methods and subjects of study encompass to a greater degree these national or regional institutions and patterns.

All observers of Brazil agree that it is a society with a rigid class structure. Social historians, such as Gilberto Freyre, Barque de Hallanda, and others, have shown us how in colonial times a small group of landed gentry dominated the large mass of Indians, *mestiços*, mulattoes, and Negroes of the country. Today, many of the descendants of these colonial aristocrats are still of the dominating economic, political, and social class of the nation. Yet descendants of relatively recent European immigrants have risen to join the old rural aristocracy as economic and political leaders. In most coastal capitals, new groups composed of governmental bureaucrats, businessmen, members of professions, and others have appeared who also lack the "family connections" with the old landed gentry but who consider themselves upper-class. These new members of the Brazilian upper class have identified themselves with the old aristocracy, and they have adopted old aristocratic values and imitate old aristocratic behavior, as far as that is possible under modern urban circumstances. Rather than considering themselves a new "middle class," these newly successful groups have come to share, with the descendants of the old landed gentry, an aristocratic set of ideals and patterns of behavior which

they have inherited from the nobility of the Brazilian empire. In order to have achieved this status, however, they had to engage actively in productive enterprise. A very large share of private investment in new and expanding industries can be attributed to this group.

The numerical importance of Brazilian social classes is difficult to estimate with any precision, since studies of this nature are not available. Yet national-income figures do provide some basis for an estimate. According to Henry W. Spiegel, a total of only 300,000 people, comprising only 2.5 per cent of those gainfully employed in Brazil in 1944, received 30 per cent of the national income, and another 2.5 per cent received 20 per cent. At least in economic terms this 5 per cent receiving 50 per cent of the national income represents the upper class. Again, urban workers who contributed to the various social insurances, according to Spiegel's study comprising 24 per cent of those gainfully employed, received only 20 per cent of the national income, and the remaining 71 per cent received but 30 per cent of the national income.¹⁴ Many of so-called "urban workers" would be employees in commerce and in the government (white-collar workers), and they might be classed as the members of Brazil's small middle class. The large number of agriculturalists (plus numerous others in both the urban and rural areas of the country whose incomes can hardly be calculated in monetary terms) form the great lower class of the country. The Amazon rubber gatherer, the plantation worker, the northeastern *vaqueiro*, the small subsistence farmer, the *garimpeiro* (placer miner), and the *caboclo* described above are all of this lower-class group.

It is the upper class who almost exclusively make, or are in a position to screen, innovations leading to economic change, since they both are at the head of business enterprise and have strong political influence in Brazil. The values, the ideals, the ideology, and the customary behavior of this segment of the Brazilian population are especially crucial for any program of economic development in the country, since it is from this class that administrators, government officials, business executives, and industrial leaders are generally drawn—or it is the values of this class, as mentioned above, that such people imitate.

One of these aristocratic values relevant to economic change is what Gilberto Freyre has called a "Gentleman complex"—a dispraisal of manual labor in every form and a preference for "white-collar" occupations at any cost. Just as in the past when manual labor was the lot of slaves in Brazil, it is considered today to be the work of the lower class. Furthermore, since labor is still relatively cheap in Brazil, even the middle class is able to hire people to do most of their menial tasks. For this reason, Brazilian professionals tend to avoid those aspects of their profession which involve physical labor in any form, and tend to concentrate in the large urban centers, avoiding the small communities and rural

¹⁴ H. W. Spiegel, *The Brazilian Economy* (Homewood, Ill., 1949), p. 27.

districts, where it is more difficult to live a "gentleman's life." There is little basis of understanding between the industrialist and his workers; even the man who has climbed economically and socially does not like to admit that he was once a workman or an artisan. Thus many industrialists, administrators, and executives in Brazil know very little about the actual work process of their enterprise and even less about the human element of any production system. Under such conditions it will be doubly difficult to build an efficient labor force which most observers point out as an important problem in the economic development of Brazil and of other Latin-American countries.¹⁵ As soon as a worker becomes literate and otherwise improves his educational level, he aspires to a nonlaboring job. Both the low wages paid and the dispraisal of physical labor by the dominant social class combine to make for a low efficiency of the Brazilian labor force.

Another aristocratic tradition which influences the Brazilian economic system is the family. Brazilian social historians have emphasized the role of large, extended family groups in the development of the country; one of them concludes: "The family and not the individual, much less the State or any commercial company was for the sixteenth century the great colonizing factor in Brazil, the productive unit, the capital that cleared the land, founded plantations, purchased slaves, oxen, implements; and in politics it was the social force that set itself up as the most powerful colonial aristocracy in the Americas. Over it the King of Portugal may be said, practically, to have reigned without ruling."¹⁶ Throughout Brazilian history, much in the political and economic trends may perhaps be understood in terms of loyalties and obligations among members of great aristocratic families and in terms of conflicts and arrangements among them.

The large patriarchal Brazilian family is no longer as united and as influential as it once was in the agrarian society of the nineteenth century and during the whole colonial period, but it is still an important institution. The tradition of the family is still maintained by the Brazilian upper class—even newly arrived politicians and newly wealthy European immigrants have either married into the "old Brazilian families" or have founded their own family dynasty. When a member of the Brazilian upper class speaks of his "family," he generally means an enormous group of relatives, including aunts, uncles, grandparents, cousins, nephews, nieces, and in-laws. Cousins may mean those in the second and third degree. Brazilians of the urban upper class move about from one city to another less than we do in North America; thus many of these relatives inhabit the same city. It is not unusual for an upper-class member to be able to count from one hundred to one hundred and fifty or more "*parentes*" in the same

¹⁵ See *Economic Survey of Latin America 1948* (United Nations, Department of Economic Affairs, 1949), p. 33.

¹⁶ Freyre, *op. cit.*, p. 27.

city.¹⁷ There are frequent "family" social affairs such as baptism, confirmations, weddings, birthday parties, and graduation exercises. In fact the social life of many upper-class Brazilians is almost wholly confined to the "family." Urban and industrial growth may have led to the fragmentation of the large Brazilian "family" among the less fortunate groups, but it is still an important institution among the upper class. It determines the relative fixity of position, aspirations, expectations, and training of the rustic and the urban proletariat as well.

It is important to know the family affiliations of politicians, administrators, industrialists, and business executives if one wishes to understand fully their incentives, their motives, and their behavior. Men appoint relatives to governmental and to business positions not only out of a sentiment of family solidarity but also because they know the weaknesses and capacities of their kinsmen. Above all they can count on the loyalty of their own kin. It is therefore logically consistent that many business enterprises in Brazil are essentially family affairs. It is common for the directorate of Brazilian corporations to be made up of brothers, cousins, and in-laws. The names of great families which control important and key industries in Brazil are known to most Brazilians and to most students of Brazilian economics. Confidence is shown in a new enterprise only when the "family" background of its innovators is known; credit is often extended between members of upper-class families with the knowledge that the debtor has the strong backing of his family. Newcomers often find it hard to break into business circles, which are dominated by important and well-known family groups.

Finally, it is among the upper-class groups that the attribute of "get-rich-quick," which has been noted so often as characteristic of Brazilian economics, is most clearly manifested. There is a desire to make a strike by speculation, by manipulation, or by gambling, and to take a high profit in business while the taking is good before prices crumble. These people have learned out of the past that wealth comes quickly in Brazil through a boom, and that a sudden turn of events may bring disaster. Brazil is full of towns once prosperous but now decadent, of families once wealthy but now poor. This attitude is not limited to the upper class, for the Brazilian lower class also share it; they hope to win in the lottery, gain a special favor from an important government official, or better their condition from some other windfall. But the attitude as it is expressed by industrialists, by investors, by politicians, and by commercial entrepreneurs, is an important aspect of the Brazilian economic system.

10. That development has taken place in Brazil during recent decades in the sense indicated above (pp. 405-408) is indisputable. Estimates of national and per-capita income even as of 1944 are only very rough approximations, inasmuch as 9 million out of 12.6 million gainfully

¹⁷ The average was 165 in a small number of genealogies (17) collected from upper-class friends in Rio de Janeiro and Salvador, Bahia, by Wagley.

employed were agricultural workers who pay no income taxes and are exempt from social insurance. Culturally expectable evasions of income-tax payments, and the inadequate computation of income for tax purposes from other groups, such as landowners, add to the margin of error in these calculations.¹⁸ More reliable measures of growth therefore are in terms of output of goods rather than increase in the number value of services. Despite incompleteness of data, developmental trends are nevertheless more clearly discernible.

Taking the five years 1925-29 as a base line, it has been calculated that the per-capita volume of goods as of 1949 had increased by 30 per cent.¹⁹ From this source we also learn that the goods available for consumption have probably increased between 20 and 22 per cent in the same period. Capital increase has not occurred at the same rate as the supply of consumer goods. Nevertheless the computed total index of capital formation (an approximation) between the five-year periods of 1925-29 and 1945-49 shows an increase of 17 per cent over population increase in the same period.²⁰

The rate of development reflected in these figures and in other further breakdowns is largely the result of the coffee boom in the nineteenth century. The world demand for coffee combined with proper soil qualifications opened up large plantations for investment purposes. This provided many new jobs of an unskilled and semiskilled nature for many rustics and their families, who had no land of their own and who eked out at best a very marginal living. This is one example of increase in output by the use of previously unutilized resources. Those who worked the soil and tended the trees became known as *colonos*, and lived with their families on the property of the *fazendeiro* in what amounted to little settlements of their own.

Today *colonos* generally have contract agreements with the producers, but otherwise the relationship between owners, manager, and laborers does not involve any essential alteration in the division of labor or its effectiveness. Although these systems need intensive study, a superficial examination of existing structural relations does not reveal important differences from an earlier period, with the exception of the absence of slaves (never so numerous here as in the Northeast) and a greater mobility of farm workers. For want of capital and perhaps because of a different cultural orientation among the *caboclos*, there has been virtually no penetration of the upper economic class, which has been largely recruited, as previously stated, from the older aristocracy as well as from some more recent immigrants.

Little machinery can be used in coffee growing and harvesting, and consequently most productive processes consist of hand labor. Neverthe-

¹⁸ See Spiegel, *The Brazilian Economy*, p. 26.

¹⁹ *Economic Survey of Latin America* 1949, p. 201.

²⁰ *Ibid.*, p. 218.

less coffee provided most of the capital which went into building up industrial enterprises in São Paulo; later a good deal was diverted to a rapidly growing cotton culture. The numbers and kinds of professionals in the cities increased, as did the white-collar workers. Urban industrial plants were supplied with ever more efficient productive machinery; and facilities for the training of a variety of skilled workers were set into motion. None of these changes occurred rapidly enough to fill productive needs in the expanding economy, but at least some of those who came to live and work in the city were able to alter their statuses and could exercise more choice in the disposition of their energies.

One other fact must be taken into consideration in this regard, namely, the mode of utilization of economic surplus. Among the wealthy land-owners most surplus in earlier days was channeled into various forms of conspicuous consumption, as the primary way of symbolizing and validating their status. As we have seen these customary modes of wealth utilization have carried over to a considerable degree to contemporary entrepreneurs, whether on large scale agricultural enterprises or in industry and business. The incentives to accumulate savings are therefore conspicuously weak. Wealth may be used to implement not only prestige but also power, and power in turn to maximize wealth, but a comparatively small portion of high profits is used to expand plant equipment, make the labor force progressively more efficient, etc.

In the rural South, where the elite of the dominant national classes are not represented, economic changes consist of little more than variation. Greater dependence may be put upon extractive industries (forest products primarily) than upon small-scale agriculture; in some cases cattle raising has occurred also to the detriment of crop growing, as a result of immigration of persons native to the state of Minas. Some persons have increased their wealth in these ways, but there has resulted no greater net increase in the use of land, manpower, or raw materials. The precipitating agency in this process has been improved means of transportation and transportation facilities. Neither of these factors has appreciably affected the traditional positions of the majority of the population in these areas. They get what they used to get, and maintain approximately the same kinds of reciprocal role relations with those who have been more successful vis-à-vis the new opportunities.

In the other rural regions of the country, even more than in São Paulo, semifeudal relationships continue to determine the social and economic relations of the simple rural worker. Yet in each major region of Brazil there are variations of these "structural relationships" which must be known and taken into consideration in studies of the process of economic change in Brazil. Furthermore, these rural segments must be seen in relationship to the dominant social and economic classes. The traditional relationships between this small upper class and the rural peasant and the growing class of urban workers are important factors in economic

growth. The institutions and the value system of this upper class affect the ideology of change, the entry of foreign capital into the country, the encouragement and development of appropriate skills, and other acts facilitating economic growth. To a large extent it is their "aristocratic" values and ideals which provide many of the life expectations and incentives, even for the rural and urban workers of Brazil.

In conclusion, then, incentives to investment in Brazil and the increasing efficiency with which resources are utilized are conditioned by a prevailing social system, contingent sets of values, and world outlooks that limit in a number of ways the capacities for growth and development. These limiting conditions have been offset to a degree as a result of foreign investment and government programs of development. Another factor which appears to be making important inroads with respect to this process is immigration. Although immigrants do not seek to change the value system underlying and stabilizing the prevailing social system, they are a dynamic element in that they take advantage of the ideal pattern of vertical mobility in the class structure. In order to rise, however, they must exhibit means and values which are not characteristically Brazilian—thrift, present denial for future gain, and entrepreneurial inventiveness.

Brazil: The State and Economic Growth

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OF THE TWO concepts whose relationship the present paper is designed to explore—government and economic growth in Brazil—the former is uniquely defined and fairly readily characterized, whereas the latter invites a variety of interpretations. As to the Brazilian government: we all know that Brazil is organized as a federal republic, with the role of the lower political subdivisions on the whole being a declining one, although the decline should be visualized as a trend with occasional ups and downs rather than as a straightforward movement toward centralization.

We also know of the paramount role of the presidency in Brazilian politics, political and economic politics as well, of the personal element which is so strongly developed in the political life of Latin America in general and of Brazil specifically, and of the pluralistic character of Brazilian economic policy, with its confusing multiplicity of “institutes,” departments, and commissions, all jockeying for power and position and all exposed to the pushes and pulls of the master chessplayer, whose rule, long though intermittent, has further enhanced the power of the presidency and given a lasting imprint to the structure of the Brazilian government as a going concern. The rules of the game may change, but the old master player is still at work, shuffling and reshuffling his cards from the New Deal to the Fair Deal and to Deals yet to come.

An economic democracy, President Vargas once remarked, cannot be organized without previous planning.¹ However, the pluralistic character of the government organization designed to formulate and carry out economic policies, imposed on the federal structure, can in itself be interpreted as an obstacle to public planning of the more comprehensive and thoroughgoing variety. Seen in another light, it provides some sort of guarantee against dogmatic excesses and definitive solutions of the master planner. By virtue of its very pluralism, a degree of elasticity is fused into the system which offers a measure of protection against the abuses of central planning.

¹ Address of Sept. 2, 1946, reprinted in Getúlio Vargas, *A Política Trabalhista no Brasil* (Rio de Janeiro, 1950), p. 39.

A few words may be in order concerning the nature of the Brazilian party system. The *regional* organization of groups within the federal legislative bodies, in vogue until recent decades, has now been abandoned, and there have emerged *national* groups and constellations. The political aims and ambitions of these parties must be sharply distinguished from their economic programs and policies, the combination of politics and economics being of such nature that parallels with our own or with British parties would be highly misleading. The Brazilian parties do not fit into the pattern which emerges when we think of organizations carrying kindred functions in other parts of the world. On the whole it is probably correct to say that those political groups in Brazil which are most firmly attached to the *political* tenets of the Western liberal tradition, that is, those groups which cherish civil liberties and the political prerogatives of the individual, tend to be skeptical of a more active role of the government in the economic sphere. Those groups, on the other hand, whose arsenal of economic policies contains more than the traditional devices of old-time liberal action or inaction, tend to be "interventionists" also in the political sphere. In other words, there does not seem to exist a "progressive" party which would combine an active program in the realm of economics with the restraint observed by old-time liberals in the political sphere.

There is a sort of tradition among the foreign students of Brazilian political life to underemphasize the practical significance of constitutional provisions. Georges Clémenceau once reported that "the Constitution enjoys a chiefly theoretic authority."² The story has it that an American journalist, in about 1937, had an interview with the head of the state and during the course of this interview informed the president that a colleague of his, another American journalist, was just studying the new constitution. "This is more than I ever did," the president was reported to have replied. However much significance such stories may have, there is no doubt that the Constitution of 1946 is extremely generous in assigning to the Union jurisdiction over the economic affairs of Brazil. There is little likelihood that the conflict which raged during the thirties between the judiciary and the legislative powers in the United States will be resuscitated in Brazil. Article 5 of the 1946 Constitution extends to the Union the power

to authorize the production of, and supervise the trade in, war materials,

to coin and issue money, and to establish banks of issue,

to supervise the operations of credit, capitalization, and insurance establishments,

to establish a national plan of transportation,

to develop, directly or indirectly, communication, aviation, and railroad services,

² Cited by James Bryce, *South America: Observations and Impressions* (New York, 1912), p. 412. The reference is to Clémenceau's *South America of Today*.

to organize permanent defenses against the effects of drought and flood, and

to legislate upon commercial and labor law, finance, insurance, production and consumption, ports and navigation, interstate traffic and commerce, money, forestry, and mineral and water resources, with supplementary or complementary legislation of the states allowed. With the Union authorized to legislate upon "production and consumption," there is little in the economic sphere over which federal control could not lawfully be extended.

Article 15 implements the powers of the Union by granting it far-reaching rights of taxation, limited only by the proviso that parts of the yields of certain taxes have to be returned to the lower political subdivisions.

The Brazilian government thus seems well equipped with constitutional authority to assume a leading role in the economic affairs of the country. Its apparatus, farflung as it is, is well developed, especially on the federal level, although it has the debilities which go with a country that is very large and highly uneven in its development, so much so that substantial parts of it are still at the periphery of the market economy and of the monetary nexus. The apparatus of the state governments reflects this enormous diversity of conditions. It is an effective instrument of economic intervention in such states as São Paulo, Minas Gerais, Rio Grande do Sul, and in a few other jurisdictions. Local government has for long been suffering from the impediments of inadequate finances, and its apparatus mirrors this weakness. Brazilian exponents of more effective self-government on the local level have frequently expressed distress about this state of affairs, and there is a tendency noticeable to relieve it by means of pre-emption of certain tax revenues and in other ways.

Brazil, having been a colonial possession of Portugal until the early years of the nineteenth century, was not liberated from the fetters of a benevolent colonial mercantilism before the attainment of political independence. The monarchy, which ruled until the 1880's, patterned its institutions after the models of Western Europe, especially of Britain. It operated with the help of an apparatus whose most important function in the economic realm was the collection of taxes on foreign trade at a few ports of entry and exit. There persisted, however, a conspicuous tendency toward the widespread exercise of administrative routines, maintained chiefly for the sake of fees and bureaucratic positions and without much constructive significance.

On occasion, private entrepreneurial initiative was supplemented by public policies, as in connection with early "valorization" schemes. But, on the whole, the republic continued the *laissez faire cum* protection policies of the monarchy. A momentous break did not occur until the

Great Depression of the thirties. At that time, valorization, that is, government-sponsored cartelization, became much more comprehensive, and in conjunction with the rising economic nationalism of the Vargas regime of the thirties it was instrumental in the creation of the apparatus which the Brazilian government now has on hand for an active pursuit of economic policies.

THE BRAZILIAN ECONOMY

With the stage thus set, we may now explore some of the characteristics of the Brazilian economy with especial reference to the role of government in economic affairs. Two characteristic features stand out. Brazil is a country plagued by chronic inflation. During the last few decades it has achieved a measure of sporadic industrialization. To begin with the long-term inflationary movement in Brazil, which may be related to the expansion of the money supply, which continues unabatedly, to the budgetary deficits on the federal as well as on the lower levels of government, to the persistently active balance of trade, and to other variables, it is pertinent to note a highly significant change. In the past, the decline of the internal purchasing power of the Brazilian currency usually was paralleled by the decline of the value of Brazilian money, also in terms of representative foreign currencies. This latter decline, for all practical purposes, has now been stopped, turning Brazil into a country considered expensive by customers equipped with dollars, and reducing drastically what used to be taken for granted during long periods of the past—a substantial difference between the purchasing power of the dollar in the United States and in Brazil—inflation in the United States notwithstanding.³ In spite of all this, the question has occasionally been raised whether Brazil has exploited, and is exploiting, to the fullest possible extent the advantages offered by the persistence of a seller's market in the United States and elsewhere during the present time and the immediate past, and whether a policy of *raising* the external value of the cruzeiro would not have been the most rational device designed to achieve maximization of the seller's advantage. In the present context, we can do no more than pose this question, pointing out, perhaps, that if the external value of the cruzeiro had been adequately raised, the ensuing maximization of advantage from the export business would not have depended, as it did, upon the increase in commodity prices in terms of cruzeiros, which continued so violently in recent years.

It would tax the powers of imagination of astute students of economic affairs to appraise what the cessation of the age-old inflationary trend in Brazil might mean in terms of improved social relations and economic stability. Inflation, Keynes quotes Lenin, is the best way to destroy the capitalist system.⁴ With inflation running its course in the United States,

³ For documentation and statistical data, see the interesting study "O Valor Externo e Interno do Cruzeiro," *Conjuntura Econômica*, IV (Oct., 1950), 35-40.

⁴ *Essays in Persuasion* (New York, 1933), p. 78.

it has become doubtful, however, whether Brazilians will take the exhortations of foreign observers as seriously as they might if we were to practice at home what we preach abroad. But there is no doubt that the voice of authoritative opinion has become more insistent in its critique of inflationary financing of economic development.⁶

Inflation tends to confound all values, and its persistence in Brazil may at least in part be held responsible for what Lord Bryce once called the "habit of mistaking words for facts and aspirations for achievements."⁶ Nowhere is this more conspicuous than in the estimates of industrial production, which are impressive enough in real terms but which overwhelm the reader when expressed in terms of a currency steadily declining in value. Industrial progress is most noticeable in the state of São Paulo. It has further enhanced the preponderant position of this state, which, in addition, has held its own in the agricultural sector of the economy. We shall have occasion to return to the industrial development of Brazil at a later stage of our discussion.

To raise the question whether governmental ideology favors inflation as a means of forcing saving is to inquire whether the government openly favors sin. There are few Brazilian statesmen in responsible positions who have not, time and again, and in the strongest terms, professed profound aversion to inflation and promised prevention or relief. Inflation has progressed notwithstanding these protestations, and its progress reflects the operation of the factors enumerated in the introduction to this section. Sporadically attempts are made to control monetary expansion more effectively and to balance public budgets. But the country's economic structure is geared to the production of export surpluses, and the "sterilization" of the inflationary effects of these would require a very advanced level of economic sophistication.

It would be difficult to deny that the distributive effects of inflation are beneficial to important segments of the Brazilian economy, especially when the domestic rise of prices is paired with exchange depreciation. The existence of vested interests in inflation in no way detracts, however, from the fact that no Brazilian government would endorse it in so many words. To explain this apparent incompatibility would require a digression on the theory of collective volition which would carry us far away from our topic.

As Professor Wallich has pointed out in his comments on this paper, the inflationary bias marks the Brazilian economy as one whose orientation is primarily inspired by the demand side. Wallich makes a fruitful distinction between economies which emphasize factors belonging to the

⁶ H. W. Singer, "Recursos Monetários Destinados ao Desenvolvimento Econômico," *Revista Brasileira de Economia*, IV (Sept. 1950), 55 ff.; Henry C. Wallich, "Underdeveloped Countries and the International Monetary Mechanism," *Money, Trade, and Economic Growth: In Honor of John Henry Williams* (New York, 1951), p. 29.

⁷ *South America*, p. 417.

sphere of production and supply, and economies in which emphasis lies on consumption and demand. While the laissez faire economics of the nineteenth century tended toward the former type, the key factors in the growth of the presently less developed countries facilitate their being characterized as consumption or demand oriented. Brazil is no exception. "An economy in which supply is the active element would naturally tend toward price stability or a declining price level, with occasional crises of overproduction. An economy activated by demand would tend in an inflationary direction" (Wallich). The distinction, which leads to the construction of alternative models, is further borne out by differences in the rate of saving, the role of government, the rate of industrialization, and other matters which will be taken up in the further course of the discussion.

The public policies which affect the Brazilian economy have a tradition of long standing. The tariff, early used for revenue purposes, and later for protection, is now combined with a host of controls over foreign trade and finance. At the turn of the century, the practice of "valorization" emerged, that is, of policies designed to obtain more for less by means of what the classical economists called "contrived scarcity."⁷ The living memory of the valorization schemes for rubber and coffee was instrumental in the creation of the cartels and restrictive schemes, *Kinders der Not*, which, born during the Great Depression of the thirties, have survived to this day in the form of "*institutos*"—of sugar and alcohol, maté, timber, and salt.

The same tendency which during the forties brought forth the *fomentos* in other parts of Latin America, expressed itself in Brazil in the form of "mixed corporations," financed by private and public agencies, domestic and foreign as well. The mixed corporations have attained special prominence in the heavy industry and in river-valley development.⁸ There are a number of other organizations—*autarquias* as well as others—which are active in petroleum development and refining, shipping, and railroad transportation.⁹

Important organizations in the financial sector include the Treasury, which now holds the monopoly of currency issue; the semipublic Banco do Brasil, a veritable octopus, which is the largest commercial bank in the country and combines therewith rudimentary central-banking functions—

⁷ Article 148 of the 1946 Constitution, however, seems to contain the promise of an antitrust law. Cf. "Limitações à Concorrência e Projetos Sobre Abusos do Poder Econômico," Confederação Nacional da Indústria, *Estudos Econômicos*, I (March 1950), 128-174. An earlier attempt at such legislation is discussed in Henry W. Spiegel, *The Brazilian Economy* (Philadelphia, 1949), p. 229.

⁸ For detail, see *ibid.*, pp. 216 ff.

⁹ The *autarquias* are listed by Arizio de Viana, *Orçamento Brasileiro* (2nd ed.; Rio de Janeiro, 1950), pp. 178-182. A more comprehensive survey is presented in "Agências Econômicas e Financeiras do Governo Federal," *Conjuntura Econômica*, IV (Nov., 1950), 27-31.

shared with the *Superintendência da Moeda e do Crédito*, created in 1945—as well as a number of highly significant duties in the fields of foreign exchange, export, and import control, and as lender for the purpose of agricultural and industrial development.

On and off there have existed in recent decades instrumentalities for over-all planning, which have paralleled the assumption by the government, signaled by the rise of the mixed corporations, of investment functions in the line of guidance or promotion. Although some work of this sort was also done by a few states, the preponderance of federal fiscal strength is such that the Union is bound to be the principal agency of public investment.

The most recent manifestation of public investment is the famous Salte Plan.¹⁰ Formulated during the late forties and passed by the Congress in 1950, this plan of economic development envisages a program of public investment amounting to over 22 billion cruzeiros over a five- or six-year period. The project calls for annual expenditures amounting to 4-5 billion cruzeiros. This compares with a federal government investment estimated at 1-3 billions of 1947 cruzeiros per year during 1945-48. However, in appraising the marked increase in planned government investment, care must be taken not to consider the entire expenditure under the Salte Plan as a net addition. Not all of it relates to new projects, and not all of it is the nature of investment.

For the year 1949 estimated investment by the federal government amounts to 5 billions of cruzeiros of 1947 purchasing power. This still is only a relatively small part of the estimated 23 billions of 1947 cruzeiros spent for gross capital formation, out of an estimated gross national product of 141 billions of 1947 cruzeiros. The amount of gross capital formation has at times fallen short of, and in general exceeds only by a relatively small margin, the value of exports. This underlines the continued importance of exports as the strategic variable in the economy of Brazil.

To elaborate further the significance of gross capital formation, estimated, say, for 1947 at 25 billion cruzeiros, we may compare it with the estimated 17 billion cruzeiros considered by a competent observer as required just for the equipment of the annual increment (2 per cent) in the nonagricultural labor force.¹¹

All the investments here indicated have occurred at rising prices.

¹⁰ There is an excellent résumé of the Salte Plan in "O Plano Salte: Dados Definitivos," *Conjuntura Econômica*, IV (May, 1950), 36-40. The bulk of expenditures—slightly over 50 per cent—is to go into transportation, followed with nearly 20 per cent for the development of power resources—chiefly water power and petroleum—and with 12 per cent each for the development of food production and for public health care, the latter expenditure not being one for investment, strictly speaking. Approximately two-thirds of the disbursements are to be tax-financed, with the remaining third to be raised in the form of loans.

¹¹ H. W. Singer, "O Financiamento de Programas de Desenvolvimento Econômico," *Revista Brasileira de Economia*, IV (Sept., 1950), 17.

Reliance on bond financing for about 1 billion cruzeiros of the annual expenditure for the Salte Plan, as envisaged by those who drafted the plan, is not viewed optimistically by many observers.¹² With the market for government bonds not immediately capable of much expansion, the occasion may call for a more austere regime of taxation, following, perhaps, the detailed suggestions which form part of the Abbink Report.¹³

THE REVIVAL OF ECONOMIC NATIONALISM

It seems that the importance of all these matters is overshadowed by one all-pervasive phenomenon—the revival of economic nationalism. To be sure, economic nationalism is not new in Brazilian political life. It manifested itself strongly during the thirties, when domestic solidarity, proclaimed so strongly by the Vargas regime, had as its corollary a vigorous program of economic nationalism. The conditions of that time, which in part explain the ready acceptability of this program, seemed to mark it as a depression phenomenon. In Brazil as in Latin America and in the world at large, the Great Depression created a situation in which economic policies that heretofore had appeared respectable at best on political grounds only, not only ceased to be economically objectionable but were widely put into practice as an economic specific according at least short-run relief from the ills of the time.¹⁴

It would be misleading to identify the rule of President Vargas with the Brazilian policy of economic nationalism. A decline of economic nationalism was visible well ahead of the downfall of the Vargas regime in 1945, and it was under this regime that important measures of economic nationalism were relaxed. Nor was economic nationalism born with the Vargas regime. On and off throughout much of the more recent history of Brazil there have been manifestations of an antforeign ideology, which in the economic sphere contained elements of what lately has come to be called economic nationalism.¹⁵ On the whole, however, the affinity which the representative figure of the Brazilian Empire and of the first three decades of the Republic felt for the institutions of Britain and of the United States has deeply ingrained the tradition of liberalism in the country.

The attachment to political liberalism was, however, in many respects chiefly rhetorical, although in its heyday it seems to have been characteristic of a representative sample of the Brazilian intelligentsia. It has not

¹² "Inversões," *Conjuntura Econômica*, V (Jan., 1951), 46.

¹³ Joint Brazil-United States Technical Commission, *Report* (Washington, 1940), pp. 137-144.

¹⁴ Some passages in this paragraph and in those which follow reiterate thoughts first expressed in the writer's book, *The Brazilian Economy*, pp. 10 ff.

¹⁵ Symptomatic of these ideologies is the *Secret History of Brazil*, a collection of scandals which depicts Brazil as the victim of a worldwide conspiracy instigated by the *haute finance* and other sinister forces. The author of this work, the director of the national historical museum, was honored by membership in the Brazilian Academy, and the work itself was published in the most representative series, "Biblioteca Pedagógica Brasileira."

been strong enough to avert the growth of protectionism at an early date. Protectionism, however, did not prevent the entry of foreign capital, and the public foreign debt was allowed to expand until the advent of the Great Depression. The increase in the foreign debt spelled increasing requirements for its service. The relentless pressure for the exports of Brazilian staples yielded by a highly exploitative plantation economy was interpreted by early critics as entailing a loss of substance. A more skeptical attitude concerning the desirability of foreign investments began to develop, and there was a tendency to overlook the great accomplishments made possible by them. In a number of instances it was also the special conditions surrounding specific foreign investments that created ill-will. Cases in point were the foreign banks and insurance companies.

The manifestations of economic nationalism which had developed up to the time of the early forties included the protective tariff, which, coupled with exchange control and multiple exchange rates, operated against imports. Remittances of foreign investors were subject to considerable scrutiny, and the extent to which they were permitted was not always predictable. New foreign investments were restricted in important respects. The states and lower political subdivisions were no longer allowed to place loans abroad. The Constitution of 1937 restricted foreign investments in water power and mining, banks and insurance companies, and public utilities. The employment of foreigners was made subject to the provisions of the so-called two-thirds law, which called for the employment of Brazilians in a given enterprise in at least the indicated proportion. There were also severe limitations in the field of the liberal professions. The Constitution of 1937, furthermore, contained a number of specific provisions which restricted the employment of foreigners as merchant seamen and journalists, while ordinary legislation limited foreign activities in certain lines of meat production, aviation, and port and dock work.

Toward the middle of the forties a decline of economic nationalism was distinctly noticeable. First of all, the decline manifested itself in modifications and interpretations through ordinary legislation which weakened the impact of certain provisions of the 1937 Constitution. While there were to be no new foreign investments in the petroleum and petroleum-refining industry, and in deposit banks and insurance companies, the field of mining was gradually opened up to the foreign investor, and so were aviation, coastwise shipping, and power production. In the field of immigration, the restrictions laid down by earlier legislation were somewhat relaxed by the new law of 1945. The whole development culminated in the Constitution of 1946. It modified and eliminated a number of earlier constitutional provisions which had restricted foreign investment, and it was expected that it would weaken also the impact of earlier restrictions contained in ordinary legislation. The only constitutional provision expressly limiting foreign investment was to apply to coastwise shipping and to the exploitation of mineral resources and of water power.

Exploitation of this type was made dependent on a concession, with concessions to be granted only to Brazilians or to corporations organized in Brazil (Article 153). This seemed to indicate that foreign companies would be allowed to organize Brazilian subsidiaries to invest in oil prospecting, drilling, and refining, and that the formerly existing restrictions on the use of foreign capital in mining would be eliminated, if only the company were organized in Brazil. In a similar vein, the Constitution of 1946 failed to contain an express prohibition of foreign investments in commercial banks and insurance companies,¹⁶ authorizing the ordinary legislator to rule on these matters.

The Constitution of 1946 raised high hopes, but the spirit of economic nationalism, temporarily dormant, has come to the fore again in recent years. The Congress has virtually continuously debated the petroleum question, but has failed to come forth with legislation which would allow the entry of foreign capital into this field. A government bill, introduced in 1950, envisages the creation of a new mixed corporation to be in charge of the entire petroleum industry from prospecting to the transportation of the refined product. It is uncertain, and highly doubtful, whether foreign capital will be allowed any role in conjunction with the development of the petroleum industry.¹⁷

In the field of commercial banking, attacks against the foreign enterprises have been resumed. In a sense, these attacks go beyond earlier attempts at preventing the entry of new foreign enterprises into this field. A bill introduced in 1950 by no less a person than the son of President Vargas proposes that foreign banks should be prohibited from accepting deposits in current account.

Finally, the amount of earnings which foreign investors can withdraw from Brazil was drastically reduced in 1952,¹⁸ discontinuing a rule which had been in effect since 1946. The impact of unexpected changes of this sort on the confidence of prospective private investors is bound to be severe, although apparently they have little effect on the decisions of public investment organizations abroad. A cynical observer might be inclined to conclude that the latter act as if they considered the unfavorable treatment of private investors as conducive to the better servicing of international investments of the public variety.

ECONOMIC GROWTH

In the light of the background material outlined in the preceding pages we shall now appraise the opportunities for government promotion of economic growth in Brazil. It is well known that in underdeveloped

¹⁶ The drafters of the Constitution rejected such a prohibition. See José Duarte, *A Constituição Brasileira de 1946* (Rio de Janeiro, 1947), III, 130 ff.

¹⁷ The drafters of the Constitution had rejected an earlier project, envisaging the gradual nationalization of mineral resources by ordinary legislation (*ibid.*, pp. 170 ff.).

¹⁸ Decree No. 20363, Jan. 3, 1952.

countries the conscious direction of economic affairs by government agencies is "at the same time much more necessary and much more difficult to execute" than in advanced countries.¹⁹ The official and semiofficial studies of the economic development of Brazil which abound in the United States usually have little to say about these difficulties. Since they have their source in institutional, administrative, and political factors, there is a natural reluctance of the foreign observer to complicate his task by dwelling on matters whose elaboration is likely to create resentment and ill feelings, and such reluctance is bound to be particularly pronounced when the observations are designed to become part of an official document. No wonder then that the point has been made that the treatment of such matters should be a duty incumbent especially upon the private student of foreign economic development, a division of labor, it is said, which would take into account the limitations placed upon private research efforts in other respects.²⁰ This point may be well taken, but nevertheless, not being a professional student of public administration and not having been in Brazil since 1946, I do not feel particularly qualified to pass judgment on these matters. In fact, I do not know whether the Rio de Janeiro custom-house still deserves to be characterized as "*usina de multas*," and whether the *mercado negro* is still as widespread as it was depicted by the present head of the state in a famous address to the Senate in 1947.²¹

To resume the discussion of economic growth or development. This notion invites a variety of interpretations, some overlapping and not a few lacking in internal or mutual consistence. This is a general matter, to be investigated at a fairly high level of abstraction, a matter to which we cannot hope to be able to contribute much within the framework of our present specific discussion.²² We propose to single out for a more extended consideration five notions or aspects of economic growth, each of which claims some following among students of economic development:

1. Population growth
2. Rising productivity
3. Growth of capital
4. Industrialization
5. Increase in welfare.

¹⁹ W. Arthur Lewis, *The Principles of Economic Planning* (London, 1949), p. 121. Appendix II of this work, "On Planning in Backward Countries," contains the best that has been said on this subject.

²⁰ Sanford Mosk, in a book review published in the *Hispanic-American Historical Review*, Aug., 1951, pp. 465 f.

²¹ Getúlio Vargas, *A Política Trabalhista no Brasil*, pp. 302-303.

²² The related notion of underdevelopment has recently been exposed to searching scrutiny by Jacob Viner, *Lectures on the Theory of International Trade*, given at the Fundação Getúlio Vargas, National University of Brazil, Rio de Janeiro, July-August, 1950, mimeographed, pp. 121 ff. Professor Viner's ideas have served as an inspiration for much of what is said on the pages which follow.

POPULATION GROWTH

In 1912 Lord Bryce, in an often quoted passage, traced the hypothetical future of Brazil if the country were developed by Englishmen or Americans. In thirty years, he surmised, Brazil would have 50 millions of inhabitants.²³ It might be interesting to speculate what really might have happened on the assumption of the famous traveler. Actually, as everybody knows, the Brazilian population has increased so fast that Bryce's estimate, without foreign aid, has almost come true, although it took more nearly forty than thirty years.²⁴ This was primarily due to a high natural rate of growth, with immigration playing a minor role after World War I.²⁵

It would not be difficult to find pleas for public policies supporting a still more vigorous rate of population growth in Brazil, inspired by mercantilist, utilitarian, or other considerations. With the natural rate of increase in the neighborhood of 2 per cent, the Brazilian population might possibly double in numbers within the short span of thirty-five years. From a policy point of view, the plea for the support of still more vigorous population growth usually assumes the form of proposals for the liberalization of immigration policies. The legislation of 1945 did indeed bring a relaxation of the restrictions imposed by earlier laws modeled after the quota system of the United States. The 1945 legislation distinguishes between immigration of the "spontaneous" and of the "directed" variety, retaining the quota system only for the former type. Quotas are based on the annual entry of 2 per cent of the nationalities which had come to Brazil in the past, with a quota of 28,000 assigned to Italy, 23,000 to Portugal, 12,000 to Spain, 5,000 to Japan, 3,000 to Germany, etc. Under the directed type of immigration, there are apparently no such restrictions on the numbers of immigrants, who must accept the residences and occupations which the public authorities have selected for them.

In spite of the relaxation of legislation and a number of statements in favor of immigration, often heard especially during the later part of the forties, the current numbers of immigrants to Brazil are low. The total number of aliens admitted permanently during the four years from 1946 to 1949 is about 115,000, or about 1 immigrant per 2,000 inhabitants per average year. Where there is current talk in favor of more plentiful immigration, it is likely to be inspired by the so-called shortage of manpower about which agricultural employers have complained for a long time. I have on an earlier occasion stated my considered opinion that under present conditions Brazil is not underpopulated in a sense which would call for

²³ *South America*, p. 420.

²⁴ There is a sad comment on Bryce's remarks in Paulo Prado, *Retrato do Brasil* (5th ed.; São Paulo, 1944), p. 175.

²⁵ Nevertheless, in absolute numbers, immigration to Brazil, from 1912 to the present time, approaches the 2-million mark. See *Anuário Estatístico do Brasil*, 1950 (Rio de Janeiro, 1951), p. 55. Concerning population growth in Brazil, see T. Lynn Smith's paper above.

the mass immigration of unskilled people without capital, and have not become aware of any new evidence which would warrant different conclusions.²⁶ If the growth of population is to be the criterion of economic growth, I would much rather be inclined to interpret it in qualitative terms, with improvements in education and health care having first priority.

RISE IN PRODUCTIVITY

Frequently economic growth is identified with increasing productivity.²⁷ A recent United Nations study of the Brazilian economy, for example, sees the key to economic growth or development in increasing productivity, and this, in turn, is said to presuppose either an increase in the amount of equipment per gainfully occupied person, the technical improvement of such equipment, or the rationalization of the organization of production.²⁸ It seems doubtful, however, whether this approach to the problem brings out the full meaning of economic growth or development. If increasing productivity is made the criterion of economic development, it seems indispensable to add *whose* productivity is considered relevant. An increase in the amount of equipment per gainfully occupied person, one of the subsidiary characteristics of increasing productivity in the interpretation under review, might well spell not an increase but a decline of the productivity of certain productive agents, of capital, for example. If increasing productivity of *labor* is to serve as the decisive test of economic development, this criterion might, but does not need to, be paired with increasing employment of capital per worker. It might also be related to improvements in the quality of the human resource, a matter easily lost sight of if the argument proceeds in terms of productivity, as witness the cited United Nations study. We propose now to discuss the growth of capital separately, returning later to improvements in the quality of the human resource.

THE GROWTH OF CAPITAL

Emphasis on the growth of capital as an important manifestation of economic growth is warranted when the marginal productivity of capital in the developing country is high. Capital may be accumulated as the result of reduced domestic consumption and/or in consequence of capital imports from abroad. Exclusive reliance on the former method is characteristic of a dictator ruling behind an iron curtain; the second method is that preferred by democratic cosmopolitanism. "A ruthless dictatorship can cut consumption to the desired extent, but a democracy will always have to rely largely on foreign capital in its early stages of development."²⁹

More subtly, consumption may be persistently depressed, cut to the

²⁶ *The Brazilian Economy*, pp. 89-90.

²⁷ E.g., Shepard B. Clough, *The Rise and Fall of Civilization* (New York, 1951), p. 11: "By economic progress is meant an increase in output of goods and services per capita in a society."

²⁸ United Nations, Economic and Social Council, *Recent Developments and Trends in the Brazilian Economy*, E/CN.12/217/Add.2., March 26, 1951, p. 4.

²⁹ Lewis, *op. cit.*, p. 126.

bone, as it were, by chronic inflation which forces saving on the consuming public. Or consumption may be restricted by taxation. The role of the Brazilian tax system is not easily ascertained. At times the income tax has been a source of revenue in excess of the yield of other taxes, but the progressive element is not overly pronounced in the Brazilian income tax. Moreover, even if the Brazilian tax system were considered progressive, it would not necessarily follow that this would have a depressing effect on saving and investment and a stimulating one on consumption. This consequence could be considered established only if it were shown that the marginal propensity to consume differs substantially among the various income brackets. While there is some evidence, not altogether conclusive, pointing to the linear character of the cross-section consumption function in the United States, nothing is known of the shape of the consumption function in Brazil.

Foreign capital may flow from private or public sources. The geographical origin of this flow is now much restricted, even when the source is a public international one. Private foreign capital, to begin with, if it is available at all, comes virtually exclusively in the form of direct rather than portfolio investments. Those who consider only the purely financial aspects of direct investments miss the point, because the inflow of capital usually is accompanied by the wholesale importation of priceless know-how and by an increase in opportunities for personal contacts between foreigners and native residents. Under favorable circumstances the foreign establishment will have a profoundly disturbing influence on traditional methods of production, with a healthy spirit of emulation taking the place of the sleepy routine of the past.

What then is the attitude of the Brazilian government to direct foreign investments? Brazilian public policies affecting direct foreign investments have undergone a number of changes during the last few decades, but certain characteristics of these policies stand out. Underlying there has been a feeling of economic nationalism, less conspicuous during the forties but more so during the thirties and again during the fifties. Moreover, Brazilians tend to differentiate between different types of foreign investments, favoring manufacture over primary production and financial services. The principal clash of opinion lies in the field of primary production. Foreign capital might be available for the development of oil and other mineral resources, but Brazilian public policies are not favorably disposed to such investments. This is particularly the case with respect to oil.

The opinions about the quality and location of Brazilian petroleum reserves differ widely, but the persistent interest of foreign companies in the development of the Brazilian petroleum industry has often been noted.³⁰ With the progressive dieselization of the Brazilian railroads and the growth of motor transportation there is much to be said in favor of vigorous action in the field of petroleum development, and it is to be

³⁰ See Joseph E. Pogue, *Oil in Brazil* (New York, 1951).

hoped that the exclusion of foreign capital from this potentially vast resource sector may not unduly delay its utilization.

The obstacles to direct foreign investments in general are manifold. Many of them could be allayed by a variety of public policies if the Brazilian government would desire this. Last year a report was prepared for the President's Committee for Financing Foreign Trade, which, on the basis of a questionnaire investigation, indicates the frequency of problems encountered by foreign investors in Brazil.³¹ The replies, received from leading firms with business interests in Brazil, indicate that the limitations placed on the remittance of profits hold first rank among the complaints of foreign firms, and this at a time when these limitations were much less stringent than they are now. Closely following in importance are export and import quotas, and the control of capital movements. A substantial number of firms complain about the lack of adequate roads, railroads, harbors, or storage facilities, as well as about the lack of trained native personnel.

Direct foreign investments in Brazil now probably exceed \$1 billion, having increased substantially during the forties, especially those of the United States. While the old-line foreign public debt was reduced drastically during that period, negotiations have for some time been going on with the view to securing a large loan from the International Bank for Reconstruction and Development or from the Export-Import Bank of Washington, a loan reportedly in the neighborhood of \$75 million. This is to be devoted chiefly to the development of transportation and power production, eminently important purposes whose fulfilment will further enhance the role of the Brazilian government in economic affairs. Loans such as this one should not be considered substitutes of direct foreign investments; they need ample supplementation by private foreign capital lest the economic overhead be developed more intensively than the specific elements in the economy which it is designed to serve.

THE GROWTH OF INDUSTRY

To many Brazilians, economic growth or the growth of capital spells industrialization. To promote the industrialization of Brazil, the government has sponsored a variety of programs, ranging from traditional tariff policies to the organization of mixed corporations. The subject of the industrialization of a principally agricultural country such as Brazil is so vast and has so many ramifications that only a few remarks can be made in the present context.

Industrialization has become the rallying cry of the underdeveloped countries throughout the world. The enthusiastic pleas for industrial development are so articulate and vociferous, so much charged with emotion, that strictly economic arguments may not suffice to generate a more

³¹ J. Frank Gaston, *Obstacles to Direct Foreign Investment* (New York, 1951), p. 158.

critical attitude. Is such an attitude called for? There is, first of all, the question of the rationality of the means designed to promote industrialization. The suitability of the protective tariff, that old standby of Brazilian commercial policy, has recently been questioned by high authority.³² There is, furthermore, the more fundamental question of the rationality of a policy of industrialization occasionally pursued with little regard to its economic cost.³³ There is, however, a still more fundamental consideration calling for exacting standards of scrutiny with respect to publicly supported industrialization projects. Turning over in my mind the pleas for the industrialization of agricultural countries, I cannot help recalling Keynes's famous remark about the "practical men, who believe themselves to be quite exempt from any intellectual influence," but who "are usually the slaves of some defunct economist. . . ." The ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest.³⁴ Applied to the worldwide industrialization movement, this means that to the extent to which this movement is inspired by economic considerations, these are likely to be of ancient vintage. More specifically, they echo ideas germane to the depression years of the thirties, when the secular trend of the terms of trade, moving squarely against agriculture and other primary production, was brought into sharp relief by the conditions of the time.

Since then momentous changes have appeared on the scene. Agricultural prices and the prices of other primary products have risen considerably faster than the prices of manufactures, and no end of this movement is as yet in sight. Nobody can say for sure whether this implies the reversal of a trend of long standing, or whether it must be interpreted as only a short-term phenomenon. But even if it should turn out a short-run phenomenon, it may be wise to recall in this connection another famous Keynesian dictum—that in the long run we are all dead. At some time in the future, most likely, the change in the terms of trade in favor of

³² Lloyd Metzler, "Tariffs, the Terms of Trade, and the Distribution of National Income," *Journal of Political Economy*, LVII (Feb., 1949), 1-29.

³³ A few examples taken from the experience of other countries: The stimulation of manufacturing production in Denmark by means of public policies reportedly has resulted in a slow-down of the rate of growth of real national income (Colin Clark, "The Trend of Real National Product in Denmark," *Review of Economic Progress*, III, No. 11 [Nov., 1951], 4). The same author has declared that government policies have left Australia so short of food that she would soon have none left for export (*Times*, London, Jan. 19, 1952). Argentina, after years of stimulating industry at the cost of agriculture, has been compelled to introduce meatless days, not entirely because of climatic conditions and export obligations but also because prices allowed the domestic producer of agricultural products are artificially depressed below prices prevailing at the world market. See also Colin Clark, "World Resources and World Population," United Nations Scientific Conference on the Conservation and Utilization of Resources, *Proceedings*, Vol. I, United Nations, 1950, II, B.2.

³⁴ *The General Theory of Employment, Interest, and Money* (New York, 1936), pp. 383-384.

agriculture and other primary production will be replaced by a movement in the opposite direction, but until this happens, the economic affairs of one or more generations may be profoundly affected by the prevailing conditions.

The significance of the change in the terms of trade is enhanced by the fact that it does not seem to reflect an upward shift in demand, which might prove capricious, but rather a "progressive failure of supply."³⁵ Professor Lewis has pointed out that during the past four decades the world's manufacturing production has increased by approximately 150 per cent, an increase by about 100 per cent in excess of that which has occurred in the field of primary production during the same period. "The annual rate of growth of primary production," Lewis informs us, "has fallen from over 3 per cent before 1913 to 1.2 per cent since that date. It is only half as great as the annual growth of manufacturing production." The failure of supply is a fact which proves true of most major subdivisions of primary production, but it is most conspicuous in the case of food. Since the Great Depression, the world's food production has increased at a slower rate than world population.³⁶

With the Brazilian population vigorously growing, and with the per-capita consumption of staple foods rising in Brazil, it is not difficult to make a strong case for government policies continuing and intensifying the promotion of agricultural production. As regards other primary products, the United States provides a highly remunerative market for virtually all of them. Our changed minerals position, which within the lifetime of a generation has turned us into an importer of a number of mineral products, our determination to maintain maximum employment at home, our vigorous policy of national defense—all combine to make very likely the continuation of a seller's market in the primary products field. If the Brazilian government is alert to these opportunities, it will want to promote a balanced economic development rather than one which would make industry the Pyrrhic victor over primary production.

INCREASE IN WELFARE

Economic growth, as a worthwhile goal of public policy, is more than the growth of population, of productivity, of capital, or of industry. Its very essence may be considered an increase in welfare, that is, in the Pigovian sense, a higher, more stable, and more widely diffused national income. This would call for qualitative population policies, for investment not only in capital but in human resources as well. No doubt there are important manifestations of such progress in Brazil. Popular education has spread; health conditions have been improved. All this has in no small part been due to wise public policies. Much remains to be done in the

³⁵ W. Arthur Lewis, "Food and Raw Materials," *District Bank Review*, No. 99 (Sept., 1951), p. 3.

³⁶ *Ibid.*, p. 4.

future, offering a broad field of activity, in which the United States, through the Point IV Program, is happily allowed to share.

RELATION TO PUBLIC POLICIES

The relationship between the behavior of the five variables discussed here—population growth, rising productivity, growth of capital, industrialization, and increase in welfare—and the government may now be summarized.

In matters of population, notwithstanding public protestations to the contrary, relatively little has been accomplished by the public policies of the past few decades with respect to the encouragement of a steady stream of immigration. This is not meant to imply that large-scale immigration would be desirable on economic grounds or that it would be available.

Labor productivity is higher in urban employments than in agriculture, and to the extent that urbanization and industrialization have been fostered by public policies, these are responsible for the rise in productivity implied thereby. As the agricultural sector continues to be very large, the preceding statement must be interpreted with care. It means that the average productivity of labor is likely to be larger than it would have been in the absence of urbanization and industrialization. It is impossible, however, to ascertain whether average productivity actually is higher than it was in the past. Available statistical data do not provide conclusive evidence of a weakening of the relative strength of the agricultural segment of the economy.

With respect to the growth of capital, it is doubtful whether Brazilian public policies have made the most of opportunities for attracting foreign investment. Under the influence of economic nationalism, certain lines of investment are reserved for Brazilian capital. Into some of these, most notably petroleum, foreign capital would flow if allowed to do so, whereas their exploitation by means of domestic financial resources is likely to proceed at a slower pace.

There is no doubt that the government's tariff policies, the formation of mixed corporations, and direct controls over imports have been potent factors in the promotion of industrialization. Some of the industries whose growth has been fostered by public policies have served the domestic as well as the export market. The textile industry is a case in point. Other industries, most notably the steel industry, cater primarily to the domestic market.

Brazil, like other Latin-American countries, has undertaken an ambitious program of social welfare. By diffusing certain types of consumer services the government brings about a greater measure of equality of the respective consumption standards as well as of real income. This, in turn, serves to improve the quality of the population, although it may possibly retard the growth of capital in the narrower sense of the word.

The Brazilian Cotton Textile Industry, 1850-1950

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AFTER A CENTURY of growth the Brazilian cotton textile industry seems to have reached the end of one stage in its development.¹ At its convention in 1949 the industry's leading spokesmen decided that they had outstripped national consumer purchasing power and that only two paths lay ahead: reduction of output or the export of excess textile production.²

It may come as a surprise³ that the textile industry of an underdeveloped area has apparently achieved such "maturity,"⁴ at least in the eyes of its leaders. That such an industrial attitude has developed practically unnoticed may be traced partly to the limitations of the available studies on industrialization in Latin America. In discussions of economic growth little attention has been given the already industrialized segments of the economies of underdeveloped areas. Particularly the role of businessmen in economic growth has been ignored. The impression is widely held that once the initial barriers are removed and industry introduced, industrial progress and the betterment of the consuming public follow naturally. It is therefore worthwhile to see how an industry develops in such an area and how entrepreneurs react to the special conditions of their economic environment. A study in historical depth of

¹ This paper is a résumé of research on the Brazilian textile industry, under the auspices of the Research Center in Entrepreneurial History of Harvard University, accomplished over a ten-month period in Brazil as part of a larger collaborative project on the historical development of Brazilian industrialization.

² Cf. Idyllio Marques Ferreira, "Memorial destinado ao congresso nacional das indústrias têxteis . . . apresentado pelo 3a. comissão nomeada pelo Sindicato das Indústrias de Fiação e Tecelagem de Minas Gerais"; Francisco de Castro Ribeiro, "Superprodução. Tese"; Carlos T. da Rocha Faria, "Discurso. . . na sessão de instalação," all in Segunda Convenção da Indústria Têxtil Brasileira (Rio de Janeiro, 1949). Mimeographed minutes.

³ The comment of the reviewer of this paper, Robert S. Smith, is illustrative: "They [the Brazilian cotton manufacturers] talk just like Yankee cotton manufacturers. . . ."

⁴ I have used "maturity" here because the industry apparently suffers from a declining rate of investment (unwillingness to make capital outlays on reorganization of management and production) and turns to government support in the form of favorable exchange rates on sales abroad.

industrial development in one sector, in this instance the Brazilian cotton textile industry, may bring wider perspective and generate new conceptions on the nature, pace, and problems of such industrialization and the entrepreneurs associated with it.⁵

THE PERIOD 1844-1885

The Brazilian cotton industry, Brazil's oldest, most widely dispersed and most important in capital and personnel, lends itself to such treatment. Historical analysis reveals how the evolution of the industry is woven, from the beginning, into the warp and woof of Brazil's effort to diversify its "essentially agricultural economy." Although initially small, the cotton textile industry was largely responsible for starting Brazilian industrialization as early as 1845, when the first mills were founded, and it played an important role in the diffusion of the industrial spirit of a time which believed that, in the words of the minister of finance in 1850, "no nation can be truly independent and march rapidly ahead when it is limited, as we are limited, to producing raw materials and foodstuffs for consumption exclusively in foreign markets."⁶

The protective tariff of 1844 began the first period of textile growth, 1844-85,⁷ and although radically changed in the early fifties, fostered small mills in northeastern Brazil (Bahia) and in the south-central area (Rio de Janeiro and São Paulo). In addition to the stimulus of the tariff, the prior accumulation of investment capital in former years of agricultural prosperity was a decisive factor in both cases.

Development of these two textile centers was not simultaneous, occurring in two distinct waves. It was in the Northeast that the first wave of mills appeared between 1844-66. Cotton was grown nearby and exported to England,⁸ although small amounts also went to the tiny

⁵ For further discussion of these points, see Miron Burgin, "Research in Latin American Economics and Economic History," *Inter-American Economic Affairs*, I (Dec., 1947), 19.

⁶ Joaquim José Rodrigues Torres, *Proposta e Relatório do Ministro da Fazenda* (Rio de Janeiro, 1850), p. 2.

Growth of the Brazilian Cotton Industry, 1844-85

	1844-66	1866-85
Number of Mills	9	48
Spindles	14,875	66,466
Looms	385	2,111
Production (meters)	3,944,600	20,595,375
Operatives	768	3,172

Sources: A. V. de Borja Castro, "Relatório do Segundo Grupo," *Relatório da Segunda Exposição Nacional de 1866* (Rio de Janeiro, 1869), p. 49; J. C. Branner, *Cotton in the Empire of Brazil*, Department of Agriculture. Miscellaneous, Special Report No. 8 (Washington, 1885), pp. 42-43.

⁷ For the significance of Brazilian cotton in the British cotton textile industry to 1860, see James A. Mann, *The Cotton Trade of Great Britain* (London, 1860), pp. 95-96, 112; Thomas Ellison, *A Handbook of the Cotton Trade* (London, 1858), pp. 84-88; Branner, *op. cit.*, p. 20.

south-central mills; sugar required sacking, and plantation slaves had to be clothed. The previous half-century had permitted the accumulation of capital; when the sugar economy of Bahia was undermined by growing competition of European beet sugar, some local investors turned to the textile industry.

Although a few mills were also erected in the Rio de Janeiro and São Paulo area in the period 1844-66, the real wave of new mills there came between 1866-85 after coffee in the Parahyba Valley had passed its first apogee and the cotton boom in the province of São Paulo, stimulated by the world cotton shortage during the American Civil War, came to an end with the resumption of American exports.⁹ As in the Northeast, the surplus capital and agricultural crisis of the period 1870-90 turned potential investors toward new fields of activity. For the narrow circle of Brazilian planter families, Portuguese merchants, and the sprinkling of foreigners in the Rio area, these two decades were financially unsettled. Few among the Parahyba Valley coffee planters could look forward to a prosperous future. There were only mortgages to pay, troublesome slaves to be kept in line and aged ones to maintain (when they were maintained), worsening erosion, and above all the threat of uncompensated emancipation of their slaves. Coffee commission houses, representing a large capital, were presented with an equally dismal future, for there was little possibility that planter debts for advances would be repaid. As for the importers of cotton textiles, foodstuffs, iron goods, and the welter of articles required by the Brazilian economy, only a market expanding beyond the old coffee plantations promised survival.

Brazilians and foreigners—English, French, Portuguese, and American—initiated the cotton manufacture despite many unfavorable factors. They had to fit themselves into an economy based on exports of raw materials and imports of many basic commodities. The third quarter of the nineteenth century was the heyday of one-crop agriculture, and its concomitant doctrine of free trade and the international division of labor braked the pace of industrialization. Many Brazilians felt then that there was little chance to compete with the cotton textiles, even the coarsest ones, of England or the United States. Textile manufacture was considered by many an "artificial" industry. Local cloth wholesalers often refused to handle domestic production while foreign mills sent over fabrics which looked as good as the coarse local cloth but were in fact poorer in quality. The early textile men found investment capital scarce while the few banks confined their operations to short-term commercial loans. Reflecting these inhibiting conditions, the number of mills founded up to 1885 was small and many of these had failed, despite help from the Imperial government through duty-free imports

⁹ On the São Paulo cotton boom of the 1860's, see Alice P. Cannabrava, *O Desenvolvimento da Cultura do Algodão na Província de São Paulo, 1861-1875* (São Paulo, 1951).

of machinery, free railroad transport, and, infrequently, through government loans and the proceeds of lotteries.

THE PERIOD 1885-1914

The protective tariff of 1879 and the approaching agricultural crisis stimulated the growth of the industry in the Rio de Janeiro and São Paulo areas, opening the second major period of development, 1885-1914. Within a few years of the tariff, however, freetraders managed to have its protectionist principles diminished, and the industry had to wait until 1897 to secure adequate protection for the coarse cottons then produced. In the interim between these tariffs the economic and political climate changed profoundly. Uncompensated emancipation of slaves in 1888 and the advent of the Republic in 1889 strengthened the movement for an industrialized or more diversified economy and prepared the arena for a bitter struggle between free-traders and protectionists. Wide use of government loans to the coffee planters in crisis during the last months of the Empire and continued by the Republican government set the stage for the speculation of the early nineties. A good portion of the loans were siphoned off by the mushrooming commercial and mortgage banks of the Republic for speculation, and, in some cases, for the textile and other consumer industries. Meanwhile, as early as 1881, textile and other industrialists organized an industrial association to defend the interests of the new industrial groups, and the influence of the association through the press and on the government during these formative years should not be underestimated.¹⁰

Overnight the dismal future before the eyes of down-at-the-heel coffee planters, their factors, and associated commercial groups of the 1880's dissolved in the vista of an expanding economy based on new consumers in the 1890's. To the capitals, Rio de Janeiro and São Paulo, flowed the rural exodus of ex-slaves. Younger and more active freedmen migrated westward into the zones of virgin forest in São Paulo opened to extensive coffee plantings. More labor than that of freedmen was needed, however, and planters drew heavily upon the levies of European immigrant labor, principally Italian. The freedmen and the immigrant members of Brazilian society required basic consumer articles, and this market for coarse textiles offered further stimulus to the young industry.

In number of plants and workers the Rio de Janeiro textile mills were in the forefront of the industry to the beginning of World War I. Despite the later growth of the São Paulo textile industry, which out-

¹⁰ Associação Industrial, *O Trabalho Nacional e Seus Adversarios* (Rio de Janeiro, 1881); "Manifesto da industria nacional," *O Industrial. Órgão da Associação Industrial*, May 21, 1881; Comissão de Inquerito Industrial, *Relatorio ao Ministro da Fazenda* (Rio de Janeiro, 1882), I; Comissão Parlamentar de Inquerito, *Informações . . . ao Corpo Legislativo* (Rio de Janeiro, 1883); Comissão Parlamentar de Inquerito, *Relatorio . . . ao Corpo Legislativo* (Rio de Janeiro, 1885).

stripped that of Rio in the third period, 1914-50, policy-making and leadership remained in the hands of the Rio cotton textile entrepreneurial group.¹¹

Another determining factor in the expansion in the period 1885-1914 was the entry of the cloth merchants, largely Portuguese, to controlling positions in Rio's leading textile mills. Begun in the eighties, this movement followed a long struggle between native cloth producers and foreign importers with overseas ties to English mills and with their own well-organized national distributive outlets. The initial entrepreneurs of the industry had been long on ideas and usually short on working capital. They had imported spindles, looms, and technical help, but had found themselves without funds to get raw cotton spun into cloth and to extend credit to retailers of the urban centers and the interior. At this juncture certain Portuguese wholesale cotton-goods importers thought it profitable to subsidize native industry by providing credit in return for exclusive or quasi-exclusive marketing arrangements. "Commerce in the textile line at the end of the Empire and in the first part of Republican life," declared a textile manufacturer and publicist in 1945, "was well organized by the Portuguese. With nationally produced cotton at hand, the prices of cheap fabrics containing ample cotton fiber were attractively low. The large commercial houses saw the advantage of producing in Brazil, assuring their chain of distribution a guaranteed, organized production. They turned to financing cotton factories, always maintaining control of the management. To appreciate the importance of this phenomenon, bear in mind that the one firm of Sotton Maior financed and controlled about nine large mills."¹²

Underlying the commercial outlook of the men entering the industry at this period was the Portuguese dictum, "Secrecy is the soul of busi-

¹¹ Distribution of the Largest* Cotton Mills in
Brazil, 1910

Area	No. Mills	Spindles	Looms	Operatives
Rio†	6	232,414	7,506	8,300
São Paulo	2	72,000	3,000	3,700
North	3	93,000	2,767	3,296
Total	11	397,414	13,273	15,296
Total (Brazil)	137	1,000,000	35,000	55,000

* Mills of more than 25,000 spindles.

† Federal District and State of Rio.

Source: Adapted from W. A. Graham Clark, *Cotton Goods in Latin America*.
Part II. Department of Commerce and Labor. Special Agents Series No. 36
(Washington, 1910), pp. 41, 46.

¹² José Soares Maciel Filho, *A Economia da Industria Textil no Brasil* (Rio de Janeiro, 1945), 1. Mimeographed minutes in Archive, Sindicato das Industrias de Fiação e Tecelagem do Algodão do Rio de Janeiro. For similar integration of distribution and manufacturing by foreign merchants in the Mexican textile industry, see Sanford Mosk, *Industrial Revolution in Mexico* (Berkeley and Los Angeles, 1950), pp. 122-123.

ness."¹³ Translated into ordinary business practice this meant a policy of no fixed prices per article, the price varying with the ability of the purchaser to pay. It meant reclassifying merchandise when it arrived at the customs so that finer textiles would pay duties specified for coarser fabrics. It meant gambling in exchange rates by delaying payment to foreign cloth exporters in Europe in the hope that future exchange rates would be more favorable. It included the policy of holding merchandise until better prices were offered, or even rigging the market. Nationally produced goods, when finally accepted by the cloth merchants, were universally priced only slightly below the cost of the imported cotton goods of the same quality. Since the group of merchants was small, collusion was facilitated and prices could be raised as high as possible.

These traditional ways of doing things regulated the commercial world in which Portuguese merchants moved. The cotton textile industry was another way to make money. New ideas, new methods entered with difficulty. Outside the limited number of families engaged in commerce in Rio, or within the planter aristocracy, new members were brought in from Portugal; and nineteenth-century Portugal was no seed bed of innovation—commercial, financial, or industrial. The merchants entered to stabilize the industry through selling profitably what had been tried and proved by earlier entrepreneurs, not to undertake any large-scale innovation in styles and quality. A few mills of the large urban centers, notably those of Rio de Janeiro, were to strive after World War I to improve the quality of their production and to try to raise the tariff against foreign competition. Most of the industry established in the formative period, 1885-1914, continued the methods and production types first developed at Manchester which came out with their Howard & Bullough or Gregson & Monk machinery.

The principles behind Brazilian factory operation were simple, almost primitive. In the first and second periods of the textile industry they remained unchanged. One importer of machinery reported that some early textile entrepreneurs appeared at his Rio office and asked if he could supply the plans and the machinery to produce cotton goods similar to the swatch of coarse material they showed him. In other cases, the entrepreneurs wrote to English companies explaining their aims and requesting a survey and estimate of costs. Until the coming of electric power after 1900, mills were driven by steam or water power, depending on their geographical location. While awaiting the arrival of the textile machinery on order, mill construction was begun in accordance with plans sent out from England, or in some cases, from the Continent.

All the large mills were built with spinning, weaving, and finishing sections; smaller establishments of this period, unable to cover the outlay for expensive spinning machinery, wove imported yarns since the tariff

¹³ Cf. Tobias Monteiro, "Industria Fabril," *O Brasil Suas Riquezas Naturais. Suas Industrias* (3 vols., Rio de Janeiro, 1909), III, 256.

at this period placed duties only on the coarse fabrics and the low counts of yarn which domestic industry produced for the Brazilian market. Along with the crated machinery there usually came a technician who looked over the mill construction, then set to work mounting the machinery. Frequently, after he had seen the machinery in operation according to the Manchester-drawn specifications and producing the simplest of fabric designs on the narrow thirty-six-inch looms,¹⁴ he was offered a contract to remain as mill manager permanently. This procedure created a pool of technicians, mostly English, who circulated throughout the mills of Brazil, as they do to this day. If the technician departed and if there were no skilled immigrant weavers, Brazilian weavers continued the same few production types year after year on the same loom harnesses with the same three or four colors of yarn, the only colors the domestic dyers know how to prepare.

In this period cotton came principally from the northern areas of Brazil: Pernambuco, Maranhão, Parahyba, and Alagoas, and from São Paulo in lesser quantities. Cotton picking, ginning, and baling were poor; and cotton fibers were irregular in length. The arrival of cotton shipments was unpredictable, for the Republican government restricted coast-wise shipping to Brazilian-owned and operated vessels. In the harbor of Rio cargo had to be unloaded into lighters, put ashore, and, if the mill were located outside Rio, placed aboard freight cars for eventual shipment to the waiting mills. Oils, greases, caustic soda, anilines, and shuttles were imported. Large mills constructed foundries and machine shops where major repairs to textile machinery were managed without recourse to slow deliveries from overseas, and in this way a considerable portion of Brazilian textile machinery was renewed, part by part.

In the rural areas, on the outskirts of large cities, and everywhere in the interior, the lure of wage labor and the opportunity to leave low-paying agricultural occupations provided mill hands for unskilled textile jobs. Before the heavy influx of immigrant labor during the nineties, Brazilian mills often contracted in England or France for skilled weavers, men and women, who were brought over to train Brazilian operatives. After 1890 many skilled weavers were found among Italian immigrants who were forwarded directly to the mills. The mass of unskilled labor came from the Brazilian population, women and children far outnumbering the men; there were few Negroes, however, in the mills of the Rio area.

Mill labor was clustered around the mill in company-supplied housing. Company stores sold supplies on credit, the charges being deducted from monthly wages. As a rule the company paid for the construction of a church on factory grounds and fostered religious observances. As

¹⁴ In 1946 78.6 per cent of 85,338 looms checked in Brazil were 30" to 40" wide. Of these, 32 per cent were 36" looms (Comissão Executiva Textil, *Indústria Têxtil Algodoeira*, Rio de Janeiro, 1946, p. 137).

the textile mills became a permanent part of the Brazilian economy, many of the early mill hands remained; and new openings were filled by their children, who entered to work beside their parents. From the beginning, Brazilian textile entrepreneurs maintained a paternalistic attitude toward the working force, the only way to reduce labor turnover. Summed up by a textile industrialist long associated with the industry, the production of textiles in those days was simplicity itself: "As the old textile entrepreneurs saw it, the textile mill did not require technicians. It was merely a matter of feeding the raw cotton in at one end and the finished cloth appeared at the other."

Selling to a protected market which expanded as population increased and more Brazilians entered a wage economy, textile mills required no cost accounting. Bookkeepers totaled the expenses of the business and divided by the number of meters produced. Under this system the coarser goods sold for prices higher than warranted, the finer goods for prices lower than needed. As late as 1945 it was reported that "rare are the textile mills that have systems of cost accounting." Members of one textile group shamefacedly admitted that "the only accounting system they had was a simple commercial one. . . . it was impossible to furnish any details because they did not know the unit costs of production in their mills."¹⁵

The commercial newcomers to the industry did not have to worry about the finer points of industrial production. Richer rewards were reserved for them in the distribution of mill production by arrangements made when they took over the direction of the mills. As important stockholders they managed the mills as directors, or as members of the fiscal committee which examined the annual statements and balances prepared by the directors. From these posts they judged what articles to produce, in what quantities, at what prices to sell. Where exclusive distribution proved difficult to arrange, they contrived to reserve a large proportion of the production for their commercial establishments. They cemented their control not only as stockholders but also because they were the quickest source of loans—long-term, low interest-bearing credit being practically nonexistent—when mills ran into temporary difficulties and needed funds to tide them over crises. By circumscribing distribution to their wholesale houses and by linking brand names to their channels of distribution, they cut off the mills effectively from day-to-day contact with small retailers and the tastes of the consumer public.

Assured profits and a protected market provided little incentive for internal competition and efficient management, for plowing back profits in the form of modern machinery, advanced techniques, new articles, or improved quality. Profits earned by mill proprietors as stockholders and as wholesalers flowed into the time-hallowed patterns of the Brazilian commercial and agricultural economy—into land, urban construction, and,

¹⁵ Jorge Kafuri and José Soares Maciel Filho, in *Comissão de Planejamento Economico, Ata da 6a. Reunião*. June 7, 1945. Mimeographed minutes.

to some degree, into conspicuous consumption. Investment in land and urban construction in the booming capitals offered, moreover, the soundest security in an economy of annually spiraling prices. These investments and control of the profitable mills could be passed on to the new, Brazilian-born generation of textile entrepreneurs.

Small groups of industry-minded men had set up the early mills. On the entry of the commercial management, equally narrow groups took over a majority of the company shares. Inheritance only distributed the solid blocks of shares among numerous relatives, and marriage within the groups crystallized new groups related to the older stockholding family members. Swollen industrial earnings often were distributed as stock dividends;¹⁶ during the few lean years of crisis, short-term loans granted by the two or three local commercial banks or the government-controlled Bank of Brazil circumvented any need to procure funds outside the owning groups through stock flotation on the Rio market. Some cotton wholesalers acted as investment bankers, it is true, employing funds confided to their judgment by Portuguese retiring to the homeland after profitable years in Brazilian commerce; portions of such funds found their way into financing textile mills.

Certain factors limited the entry and participation of even such "outsiders" in the family industrial enterprises. The belief was common that no investor of sound financial judgment would purchase stock advertised to the general public, for this countered the financial policy that drew extra capital from the members of the allied families.¹⁷ Logically, it was reasoned, if the compact circle of wealthy stockholders knotted their purse strings, the company's financial condition was unsound and the mill not worth buying into. And there was the traditional principle of insulating the corporation from outsiders. Company statutes were fashioned "as far as possible to avoid, within the law, entrance of outsiders into the corporation without the consent, tacit or expressed, of all the stockholders, as well as to maintain an equitable system of stock transfers and to guarantee the stability of the Company administration."¹⁸ Finally, preservation of the industrial patrimony—"stability"—was facilitated by avoiding any divorce between ownership and management. Into the mills were niched the sons, sons-in-law, nephews, and godchildren of the management. To them were confided the methods that had worked for their seniors and were to perform for them efficiently down to the crisis of the thirties.

¹⁶ The comments of an American visitor to Brazilian mills are clear on this point. "The large mills make it a rule not to declare over 12 per cent cash dividends a year, so that the dividends do not show the actual profits made by the mills. . . . In the *Progresso Industrial do Brasil*, for example, where two-thirds of the shares have been distributed as a bonus, a 12 per cent dividend means 36 per cent a year on the original investment of the shareholder" (W. A. Graham Clark, *op. cit.*, pp. 43-44).

¹⁷ Ernesto Street, "A Industria Textil no Brasil," *Estudos Economicos*, III and IV (Dec., 1950), 105.

¹⁸ A São Paulo textile mill, Minutes of the Board of Directors, Feb. 9, 1943; *Estudos Economicos*, *loc. cit.*, 104.

THE PERIOD 1914-1950

In the third major period of the Brazilian cotton manufacture, 1914-50, the industry seemed to achieve a maximum of productivity and minimum of stability. The steady growth characterizing the first half of this period, 1914-25, in which entrepreneurs founded mills or expanded existing ones in the interior of the state of São Paulo, in Minas Gerais, and in the northern and northeastern states, drew to a close in 1925 when the worldwide crisis began to affect the rural consumers of Brazil, the backbone of the national textile market. From 1925 to 1939 the industry's spokesmen began to look beyond the requirements of the internal market; in the thirties they declared the industry had surpassed the demands of the national market and, by the end of the decade, that the excess should be exported unless production on an industry-wide basis were restrained. Overseas markets and international commitments during World War II spurred textile exports until the government temporarily halted them in 1946. But in the postwar years the industry again insisted that the only solution for the problem of "overproduction" was export on a large scale.

World War I gave the mills founded in previous decades an opportunity to explore the national market. European nations were tied up in war, and their production offered no competition to Brazilian production.¹⁹ Meanwhile, the overseas demand for Brazilian raw materials brought prosperity to both urban and rural areas. A new group of textile entrepreneurs appeared. Of the total of 399 textile establishments of all sizes founded by 1920, 113 appeared in the period 1915-20. Production of cotton goods rose, in the same period, from 470,783,000 meters in 1915 to 587,182,000 meters in 1920.²⁰

¹⁹ Imports of Cotton Cloth,* 1911-20
(in Thousands of Kilos)

Year	Total Imports	Year	Total Imports
1911	6,781	1916	2,004
1912	4,913	1917	2,128
1913	3,631	1918	2,395
1914	1,208	1919	1,616
1915	1,092	1920	3,455

* Includes whites, grays, prints, dyed goods.

Source: Ministerio da Fazenda, *Serviço de Estatística Econômica e Financeira* (hereinafter cited as *SEEF*).

²⁰ Brazilian Cotton Cloth Production, 1911-20
(in Thousands of Meters)

Year	Production	Year	Production
1911	378,619	1916	474,302
1912	399,712	1917	548,120
1913	384,989	1918	494,422
1914	314,345	1919	584,402
1915	470,783	1920	587,182

Source: Ministerio da Fazenda, *SEEF*, in *Estudos Econômicos*, loc. cit., p. 117.

Of the mills founded throughout Brazil, many were weaving mills located in São Paulo. The large spinning and weaving mills there were all established prior to the war; the smaller mills and those restricted to weaving were founded and expanded in the war and postwar years because of particularly propitious conditions. The state of São Paulo was the heart of world coffee production and the capital city was the center of the coffee trade; the prewar crisis of 1913 had brought many rural workers to the capital in search of employment. The wartime combination of investment capital, cheap labor, and consumer demand stimulated industries there in general. Many of the small weaving mills, using yarn purchased from the large spinning and weaving mills and the few specialized spinning mills, were often founded by immigrants who had accumulated capital as peddlers in the rural areas. After the war São Paulo mills were stimulated by another factor, locally raised raw cotton. In 1918 a bad frost ruined the São Paulo coffee crop, and many planters turned to cultivation of cotton between rows of coffee to keep their labor on the land for later coffee crops and to defray maintenance costs until coffee trees would again produce.

São Paulo cotton production, begun as an emergency measure, found a ready internal and later external market. State agricultural institutes supplied technical advice standardizing types, quality, and processing of cotton produced. Local mills absorbed the cotton, which was cheaper than that imported via steamer from the northern Brazilian states. A further incentive to local cotton cultivation came in the federal policy of permitting exporters to retain a portion of their cotton sales for negotiating in the "gray" exchange market, obtaining through exchange differences higher prices than overseas quotations provided.

Similarly, the prosperous wartime and postwar years acted as an incentive to mills already established throughout Brazil and to the new ones which attracted available capital. This was the situation in the large state of Minas Gerais, in Bahía, and particularly in Pernambuco. As demand for coarse textiles grew, the mills worked their spinning machinery overtime and added new looms where possible. The initial machinery was amortized rapidly by using the cheap local labor supply in two and even three labor shifts and by sales in local markets, where their cloth could compete with the coarse fabrics sent by the mills of Rio and São Paulo over the poor Brazilian transportation network. Businessmen or planters, the newcomers entered the cotton manufacture without any technical knowledge, but with the same "facility, with the same motives and experience that they would set up a dam, organize a truck line or open a drygoods wholesale house."²¹ Meanwhile, in the large urban centers, some of the older mills, more far-sighted than others, experimented with the spinning of finer counts of yarn into the more expensive

²¹ "Superprodução industrial," *O Observador Econômico e Financeiro*, XIV (March, 1937), 92.

fabrics where internal competition from antiquated installation of interior mills was not possible. The only competition in these fabrics came from English medium and fine goods which began to flood the Brazilian market after 1925.

First signs of the world-wide depression coincided with the expansion of coarse cotton production throughout the Brazilian cotton textile industry and the move of some mills to supplement their traditional production with finer goods. Moreover, saturation of the interior markets as well as those of the urban centers was hastened by the declining quotation in overseas markets for Brazilian raw materials, which reduced the purchasing power of the rural consumers. The "dumping" of English cottons was facilitated by the monetary stabilization program of the Brazilian government which took office in 1926, a policy which made Brazilian markets vulnerable. Pressure for production other than that of coarse fabrics, monetary stabilization, and heavy English shipments were at the root of the arguments of the textile associations of Rio and São Paulo presented to the Congress and the president in behalf of higher tariff protection in the years 1926-29.²²

The arguments mustered by the industry and the criticism of certain sectors of the press and representatives of importing groups spelled out the themes that recurred in the troubled years of the thirties. The industry argued that without adequate protection the advances of the industry in fabric and yarn production would be erased. Brazilian mills, it claimed, could completely supply the national market; the main danger, it warned, came from "dumping" which had as its goal the "appropriation and control of the Brazilian market. . . ."²³ One sector of the press claimed that crises were customary, and if persistence of the crisis meant possible competition, it suggested that consumer resistance be combated by "improving and cheapening production. . . ."²⁴ From antiprotectionist importer groups came the statement that high tariffs would permit national manufacturers to raise prices beyond the means of the middle and lower classes. One importer stated in 1928 that the percentage of imported fabrics was only 7 per cent of total national production, and that raising the tariff "on half-a-dozen articles, called fine goods, would permit sales producing an enormous profit" for domestic manufacturers.²⁵ Openly it was predicted that

²² The cotton textile industry of another underdeveloped area, India, adopted a similar policy at the same time. Cf. H. L. Dey, *The Indian Tariff Problem in Relation to Industry and Taxation* (London, 1933), pp. 59-62.

²³ Centro Industrial de Fiação e Tecelagem de Algodão do Rio de Janeiro e Centro dos Industriais de Fiação e Tecelagem de São Paulo, Memorial apresentado ao Congresso Nacional sobre o projecto de revisão das tarifas alfandegarias (Rio de Janeiro, September, 1927), 5. Mss. in Archive, Sindicato das Industrias de Fiação e Tecelagem de Algodão do Rio de Janeiro.

²⁴ *Correio da Manhã*, Aug. 28, 1926.

²⁵ H. F. Wileman, "O augmento de direitos sobre os tecidos de algodão," *O Jornal*, Nov. 25, 1927; Carlos Silveira Eiras, "A industria de tecidos de algodão e as tarifas aduaneiras," *O Jornal*, June 27, 1928.

the Congress would not choose to defend the "cruelly sacrificed" nation against the powerful industrial "magnates."²⁶ The latter, complained another newspaper, preferred to use their time and intelligence in obtaining from the government the tariff increases they wanted instead of solving the daily problems of any industry.²⁷ In 1929 the cotton clauses were revised upward to give the protection the industry demanded. But the crisis was not averted by excluding the foreign competitor.²⁸

In 1930 came the year of crisis for the Brazilian cotton textile industry. This was the year in which some leaders thought seriously of cartels or trusts to organize and distribute textile production, as production sank to 1915-16 levels. In the capitals, São Paulo and Rio de Janeiro, the large mills cut production 25 to 50 per cent, while elsewhere many small mills remained paralyzed completely. Cloth wholesalers, fearful of what might happen to cottons stored in their warehouses, sharply reduced their purchases and forced the mills of the interior to form temporarily their own retail chains.²⁹ Economic crisis, reduced consumer purchases, unsold cottons, and a revolutionary regime capping a decade of abortive nationalist movements, forced the textile along with other consumer-goods industries to advocate measures restraining competition and maintaining the status quo within the industry. The restrictive measures meant that traditional administrative, commercial, and technical patterns would not be overhauled in the light of changing conditions. From controls on the importation of machinery which could increase production to limitations on the working hours of domestic mills and to the idea that the industry must "export or die," the path was a straight one in the years 1931-50.

Despite the preaching of autarchy current among Brazilians at this time, the textile industry, together with the paper and shoe industries, turned to the industrially mature nations for a blanket description of the national ailment, adopting the diagnosis and phrasology of "overproduction." Without adducing statistical proof beyond the statement that stocks in mills and in wholesalers' warehouses were mounting, the textile manufacturers and allied associations obtained in 1931 from the revolutionary government a decree forbidding for three years the importation of ma-

²⁶ "O proteccionismo insaciavel," *Correio da Manhã*, Dec. 23, 1928.

²⁷ "A politica dos grandes contra os pequenos," *Diario Carioca*, Nov. 30, 1928.

²⁸ Imports of Cotton Cloth.*

1927-34 (in Thousands of Kilos)

Year	Total Imports	Year	Total Imports
1927.....	6,663	1931.....	343
1928.....	7,638	1932.....	312
1929.....	4,494	1933.....	634
1930.....	1,146	1934.....	329

* Includes whites, grays, prints, dyed goods.

Source: Ministerio da Fazenda, *SEEF*.

²⁹ A. G. Mascarenhas, *Relatorio Geral (1918-1938) apresentado aos Accionistas da Cia Textil Bernardo Mascarenhas* (Rio de Janeiro, 1939), pp. 137-138, 176-177.

chinery to those manufacturing industries whose production "in the judgment of the government might be considered excessive."³⁰ Hastily prepared, the decree did not eliminate imported looms. In extending the decree in 1934 for another three years, 1934-37, the prohibition on foreign looms was included. Although leaders of the older cotton mill entrepreneurs were aware that per-capita consumption of textiles was low in Brazil, something had to be done, they felt, to limit "unchecked competition." As one spokesman wrote to another, "Overproduction or underconsumption . . . the effects are exactly the same."³¹

In effect the prohibition of machinery imports for the textile industry froze the relative positions of the large urban mills with respect to the smaller establishments of the interior. First, the prohibition prevented the interior mills from taking advantage of the attractive offers made by European machinery producers eager to sell abroad on credit in the form of instalments spread over many years at low rates of interest. Second, it meant that those mills which had been able to augment their spinning and weaving machinery in the years following the end of World War I could produce the finer fabrics which the antiquated mills of the interior could not match. In 1934 a textile-machinery importing house wrote to the Rio textile association: "Only the relatively few large mills, modern or remodeled, which exist in Rio de Janeiro and in São Paulo have efficient equipment. The majority of the small mills are in a stage of modernization and reorganization, depending on their respective financial situation; in a few cases, they can modify their types of production which experience indicates as most adequate for supplying certain markets. . . ."³²

The small mills hobbled to coarse fabric production now entered a vicious circle. Since they could not import spinning machinery capable of turning out yarns of higher counts, they could not move into the production of fabrics with a higher profit return. Tied to coarse fabrics, where competition was strongest, the small mills reduced expenses by driving spinning and weaving machines night and day with cheap local labor, while purchasing nationally manufactured looms which the decrees of 1931 and 1934 did not prohibit, or discarded ones. Although expansion in weaving sections without corresponding increase in spinning capacity through spindle purchases accentuated the disproportion between spinning and weaving sections, long a factor in Brazilian mills, it gave small mills a new lease on life. Forced to lower costs and to cut prices under pressure of competition, the mills uncovered new consumers for their coarse fabrics.

After six years (1931-37) of the prohibition of machinery imports on the principle that the nation suffered overproduction of cotton textiles,

³⁰ Decreto n. 19.739, March 7, 1931, Art. 2.

³¹ Letter, Rio de Janeiro, Jan. 28, 1938.

³² Letter, Henry Rogers Sons & Company of Brazil, Ltda., to Directors, Centro das Industrias de Fiação e Tecelagem de Algodão do Rio de Janeiro, March 31, 1934.

it became evident that the industry had in fact expanded production and seen it consumed.³³ This was revealed when the decree of 1934 expired and the Rio and São Paulo textile associations sought the retention of some limitations on production. The pattern of Brazilian coffee valorization schemes, which had permitted Latin American and other areas to expand coffee production while Brazilian producers supported the price structure, was repeated in the Brazilian cotton manufacture. Under the umbrella sustained by the established mills of the large south-central urban centers which had first secured complete protection from foreign producers and then sought to restrict domestic competition, the small mills of the interior and one or two large mills of the North had expanded feverishly. Comparing their overhead with the cheap labor supply of the mills of the interior, the established mills argued that overproduction still existed and that continued limitations of machinery imports therefore were absolutely essential to maintain sales. When that argument was attacked, they urged that exports be emphasized and that working hours be limited throughout the Brazilian cotton mills—this last a body blow at the competing mills working overtime.

In this three-way struggle involving two divergent groups within the industry and the government, all sides used the terms overproduction and underconsumption with no adequate statistical bases beyond highly partisan analysis of production and consumption. Those who defended the unrepresented consumer in the great debate pointed out that restriction on machinery imports or on working hours would be inevitably translated into higher prices. The small mills of the interior found vehement coreligionists in one sector of the textile industry of the Northeast, which operated in similar conditions but which had organized its own retail outlets. "Southern manufacturers," the Northerners declared, "represented by a few more far-sighted mills . . . fear the rapid development of a new competitor, transforming Northern consumers into producers of their own cottons." Imports of modern machinery were necessary to insure "production both cheaper and more improved in quality. . . ." Limiting the hours of labor would, they warned, prevent the "free play of competition" among Brazilian mills.³⁴ Heatedly the Rio textile association denied the validity of such allegations. One sector of the press, surveying

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Brazilian Cotton Cloth Production, 1931-37
(Thousands of Meters)

Year	Production	Year	Production
1931.....	633,893	1935.....	752,691
1932.....	630,738	1936.....	914,529
1933.....	638,803	1937.....	963,766

Source: Ministerio da Fazenda, *SEEF*, cited in *Estudos Economicos*, loc. cit.,

p. 117.

³⁴ Companhias de tecidos em superprodução. Memorial sobre a situação da indústria textil no Brasil (Rio de Janeiro, Oct. 1, 1938), p. 3. Ms.

the welter of contradictory statements, tried to summarize what the discussion revealed, although it agreed that some excess production existed. "What must be emphasized is the disunity of those involved, who, by these retaliations, lose precious time which might be applied to rational organization of production, thorough investigation of markets, creation of a better system of distribution and advertising, and to the adoption of improvements which increase the profits of production and decrease the cost of the product."³⁵

In the face of divergent opinions within and without the industry, and lacking adequate statistics to orient it, the government compromised in August, 1939, by limiting working time to sixty hours weekly "to protect the interests that have developed." Within a month of this decision the outbreak of World War II shelved the problem of Brazilian textile production by opening new markets in Latin America, Africa, and the Middle East. Although a few mills and wholesalers had experimented with exports before this time, their exports were a trickle compared to the flood of cotton goods shipped abroad after 1940. Under the stimulus of the demands of the allied and neutral nations, Brazilian cotton textile production soared from 893,904,000 meters (1939) to 1,414,336,000 meters (1943). To protect the internal market from the shortages and consequent high prices induced by heavy exports, the government and the industry agreed in 1943 that the industry would set aside in each of the mills a fixed percentage (10 per cent) of production for standardized articles of general consumer use to be sold at fixed prices; no price controls were applied to other textile production sold within Brazil. Earnings in the industry during this period were high, with the returns on exports a major factor.³⁶ So great was the attraction of the profits in exports that in the early months of 1946 the government- and industry-sponsored textile commission then supervising the industry resolved to halt exports until the internal market was properly supplied at reasonable prices. Exports were later resumed on the basis of commercial treaties between Brazil and other nations, but the industry felt that the 1946 measure had left overseas markets to the return of the one-time suppliers,

³⁵ "Superprodução de tecidos," *O Observador Economico e Financeiro*, XXXV (Dec., 1938), 113.

Distribution of Dividends and Bonus in Selected
Brazilian Cotton Textile Mills, 1943

Company	%*	Company	%*
S. Pedro de Alcantara	60	Brasil Industrial	23.5
S. Joao Evangelista	45	America Fabril	22
Cotonificio Gavea	36	Nacional de Estamparia	20
Confianca Industrial	35	Nova America	18
Corcovado	27.5	Progresso Industrial	18

* Represents percentage of dividends and bonus to nominal capital.

Source: Adapted from *Jornal do Commercio*, Nov. 18, 1952.

European and U. S. mills. Meanwhile, Brazilian production was high, but prices stayed high too, and the industry was face to face again with overproduction from 1947 onward.

In 1950 the Brazilian cotton textile industry was back where it had been during the crisis years of the thirties. Temporarily, the war years had absorbed all the textile production, regardless of cost. Forced to refocus on the internal market at the end of the war, the industry felt that the national market could not absorb what was produced. Had the industry matured to the point where only overseas markets made the difference between profit or loss? Had it exploited the internal market to the full,³⁷ or did it rely on the principle of the maximum unit return consistent with the maintenance of high profit levels?

The situation of the largest mills and that of the small mills had not changed radically since 1939. As in World War I, the expansion had occurred generally within the established mills; at the close of World War II 12 per cent of the mills in Brazil held 49 per cent of the total number of spindles.³⁸ These could undertake large-scale modernization of existing plant installations and the foundation of new mills; at the end of the war and in the postwar years their main interest lay in the purchase of modern equipment to produce more, quicker. The Economic Commission for Latin America, in a 1951 report on productivity and efficiency in the textile industry of five Latin-American nations, provided more fuel to the controversy whether the internal market had been truly exploited and whether the only way to produce efficiently lay in mechanical modernization. Referring to the older mills, it suggested that "it is more important to reorganize old industry on a new basis than to modernize equipment and expand installations." It expressed the fear that organizational and administrative "backwardness" in management would be transferred to the modern mills: "Though it is recognized that a part of the administrative deficiency of modern industry may be ascribed to the fact that some of the mills have only recently begun to operate. . . the presence of these deficiencies in all the countries and their great importance in nearly every case, suggests the possibility that those general factors which give rise to administrative backwardness in the old industries are also affecting the modern mills."³⁹

THE FUTURE

Here, then, are the highlights in the history of the Brazilian cotton manufacture, an industry which must now resolve its future course of action. Unfortunately for the entrepreneurs involved, their problems today can in no sense be dismissed as those of an embryonic or infant industry:

³⁷ On this point see Genival Santos, *A Recuperação da Indústria Textil Mundial e o Brasil* (Rio de Janeiro, 1948), pp. 20-21.

³⁸ Comissão Executiva Textil, *op. cit.*, pp. 299-344.

³⁹ United Nations, Economic Commission for Latin America, *Labour Productivity in Five Latin American Countries* (New York, 1951), p. 5.

that stage was passed at the close of World War I. Since then the industry has expanded to a point where only two alternatives are possible: that of exports under the shelter of government subsidies or reorganization of production and distribution to lower prices in the internal market.

The conservatism of textile-mill proprietors, their unwillingness to alter organization and administration stem from the experience of past decades when government aid supported them in times of crisis. Cushioned by this security, why should the industry innovate? The remains of more than one trail-blazing business enterprise litter the Brazilian industrial landscape.

Today a new factor alters the situation. Whereas in the late nineteenth and early twentieth centuries industry, government, and the public were presumed welded together in the patriotic undertaking of making industry the instrument of effective political independence, today the consuming public is less interested in continuing that joint enterprise. It reasons that the time has come for an accounting, for less emphasis upon industry's privileges and more stress upon its duties. The temper of the Brazilian consumer today is, broadly speaking, critical of the industry. Via the government it has subsidized the cotton manufacture at various periods through high protection, financial assistance, and restrictions on the imports of new machinery. Now the cotton textile industry must pay greater attention to the national consumer. Since there is no divorce between ownership and management, no anonymity clothes the industry's entrepreneurs; as far as the Brazilian public is concerned, family names are closely linked to entrepreneurial activities.

Thus spotlighted, the industry must perform its social responsibilities, it must measure up closely to what the increasingly vocal public expects. Cotton-mill proprietors will have to provide cheaper cloth of good quality for all. In this hour of decision, the situation of the Brazilian cotton textile industry is not unlike the condition of the industry in other "underdeveloped" areas of the world.

Indian Economic Organization

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AN ATTEMPT is made in the following to set out in brief the salient features of Indian economic organization. India is a large country and has an enormous variety of natural conditions. The stage of development reached also differs widely from region to region. In the circumstances, a brief general description necessarily involves considerable, somewhat arbitrary, simplifications. Approximately 85 per cent of the population of India lives in the countryside. About three-quarters of residents in the rural areas are directly concerned with primary production; among primary production agriculture is overwhelmingly important.

The typical unit of agricultural production is the peasant family farm. Land-tenure systems vary widely from region to region, but the scale and the organizational characteristics of agricultural production are comparatively uniform. There are states in which ownership of land is concentrated to a considerable extent in the hands of a comparatively small number of persons; in other states the bulk of the land is held by cultivating-owners; and there are situations and systems lying between these two extremes. In almost all states, however, the actual cultivator operates on a comparatively small scale, chiefly with the help of family labor. The status of the cultivator-tenant, owner, etc. may differ, and the burden of rent may vary, but the organizational pattern remains the same. This characteristic differentiates India from other important types of agricultural economies. Large estates do not mean, in this country, large agricultural units worked either as feudal estates or as modern farms. They have always been parceled out among and worked by small tenantry. The abolition of landlord systems in India has thus not the same consequences for productive organization as in the countries of, say, Southern and Eastern Europe. The dominant form of capitalistic organization in agriculture—the plantation—which has become important in many underdeveloped countries during the last two centuries has also been confined to a comparatively small field of India. The plantation is the dominant form only in the cultivation of tea, coffee, and rubber; and the cultivation of these crops is highly localized. Within their own regions,

which are for the most part mountainous regions, unsettled previously, the plantations are the most important organizational type; outside these regions their influence in agricultural production is insignificant.

The form of tenancy does not materially affect agricultural production. Crop-sharing, which is widespread all over the country, normally means the supply by the landlord of a proportion of the working capital. But this does not lead to a larger investment of working-capital resources in crop-sharing units as compared with the farming of cash tenants.

The geographical conditions are extremely varied and the circumstances in which agricultural production is carried on are equally so. At one extreme stand large, arid regions with a scanty soil surface, with meager supply of subsoil water and small and uncertain annual precipitation of rain. Agricultural-production activity in these regions is highly precarious, barely profitable, and confined to only a part of the year. On the other hand, there are rich alluvial tracts where the soil is highly productive, the rainfall is plentiful and certain, and where supplementary irrigation facilities make secure an appropriate supply of water throughout the year. In such regions agricultural-production activity can be carried on throughout the year and its intensity raised to a high pitch. Among all these varying circumstances the size of the typical peasant family holding remains small; that is, as related to the supply of labor within the family available for employment on the farm. Under favorable external conditions this leads to migration, seasonal or semipermanent, of members of peasant families. The volume and duration of migration depend chiefly on employment opportunities available to migrants. This may be casual or seasonal labor in the neighborhood, either agricultural or nonagricultural, or seasonal or permanent employment in distant regions. Where agricultural activity is confined to a part of the year, this may be held to generate streams of annual seasonal migrations. But seasonal migration is usually the result, not of conditions in which agricultural activity is carried on, but of conditions of living and employment in the region of alternative employment. For, in most rural regions which supply migrant labor, the extent of chronic underemployment in agriculture is so large that these could supply in appropriate circumstances much larger numbers of migrants, seasonal or permanent.

The capital resources of the peasant family are correspondingly small. The stock of working capital and the resources available for capital development are both limited. India is an old, settled country with a large population. Therefore, such development of land resources as can be carried out with family labor and with the equipment of implements and draft cattle available to the average peasant has in this country proceeded very far. Similarly, intensity of cultivation compatible with the limitation of resources is also considerable in appropriate circumstances. The technical level at which productive activity is carried on varies; but in the more settled and developed areas the traditional technique is fully exploited, and

ordinarily no marked improvement could be brought without a considerable increase in the capital resources available to the peasant family.

The pattern of productive activity is shaped by the organizational type. Broadly there are three purposes which productive activity has to serve: food for the family, fodder for livestock, chiefly draft cattle, and a surplus for sale. The small size of the productive unit and the differences in terms made by the wide margins at both sale and purchase make for an emphasis on domestic production, as far as possible, to serve the first two needs. Ordinarily, even with an increase of unit size and with almost complete commercialization, production for domestic needs does not vanish though its proportionate importance decreases rapidly. This is statement of merely a common characteristic. Its manifestation will be different with differing sizes of units and different crop combinations. For example, on very small farms or among what may be called part-time farmers the need for a cash income may lead to a cash crop being grown or part of food or fodder production being sold even though the remainder is not fully sufficient for family and farm business needs. In the same way, in areas where extension of cultivation of particular cash crops is widely possible, especially at times of a relative increase in the price of these crops, cash crops may expand to the extent of making some purchase of food and fodder necessary even on a large farm. It is not often, however, that such a position is reached. The production pattern thus contains everywhere a core of self-sufficiency. The share of production included within this aspect does not come on the market and is not monetized. Another part that is nonmonetized or only partly so is that in which the primary payments are made in terms of produce. The most important part of this is the payment in terms of produce, to casual or permanent labor and to artisans. Crop-sharing in the case of the smaller landlords may also be classed with this.

The structure of the agricultural labor economy is shaped by the dominance of the peasant family unit. This means that the majority of production units in most agricultural regions do not offer employment to outside labor except at times when pressure of seasonal operation makes such employment necessary. However, the distribution of the size of cultivated holdings is uneven, and only a small proportion of units in most tracts would demand the employment of agricultural labor on a more permanent basis. This would be the more prominent the more highly commercialized and intensively developed agriculture was in any particular region. In such regions again the monetization of the larger part of the economy would have brought about a greater concentration of land operation and capitalistic agriculture, on one hand, and a permanent body of landless agricultural labor, on the other, would have emerged. Such regions would, however, be exceptional. For the larger part agricultural units employing agricultural labor through the year and families of purely landless agricultural labor would be small in numbers and the bulk of

agricultural families would employ casual and seasonal agricultural labor and would be the source of supply of such labor.

Agricultural productive units as sketched above would come into contact with the outside world and with modern economy chiefly through the monetized sector of their operations. The extent of this would be defined by the extent to which the peasant producer family, in its aspect of both producer and consumer, needed to trade with the outside world and to the extent that its economic relations with outsiders made necessary dealings in money. And it may well happen that the latter aspect may in some cases be the more important. The agriculturist would have such relations chiefly with the landlord, the state, the moneylender, and the trader. Rent where it had to be paid in money, taxes such as the land revenue, the water charges, etc. and the payment of interest, etc. on the debt would all necessitate converting produce into money form. To the extent that any of these payments were inexorably timed, the sale of given volumes of produce would be enforced on the cultivator at particular times. These monetary payments, especially those in connection with debts, may also have the effect among the smaller and poorer units of monetizing an unduly large share of the economy. Many of these units would find it necessary to sell a large share of total production to satisfy immediate and pressing demands at one time of the year and to buy back for consumption needs part of these sales at a later period.

Agricultural produce available for disposal would come into the hands of the producer in significant quantities only at fixed periods in the year. The requirements for making outlays both as producer and consumer would be more continuous throughout the year. Hence the need for credit. The funds for repayment would accrue chiefly through the disposal of the surplus of agricultural produce. Credit would thus be linked with the marketing of agricultural produce; and moneylending and the marketing of agricultural produce and also general trading activities would tend to be combined by one agency. In economies where the landlord holds the dominant economic position, moneylending may be connected with this class.

The smaller the scale of the peasant and the greater his ignorance and his distance from the market, the more would he be dependent on the trading-moneylending class and the greater would be the margins they would command. Apart from the scale of individual operations, the development of the transportation system of a region and the extent or demand for the product offered by the agriculturist for sale would determine the strength of position of the agricultural producer. In the extreme case of the sugar-cane producers of Bihar and the United Provinces there exists at present a guaranteed purchaser at prices fixed by government, in the local sugar mill. In crops like cotton there are in most important cotton areas a large number of regulated markets where the producer is usually certain of obtaining a price in fair relation to current

quotations on the commodity exchange. Again, in commodities like cotton and some others, agents of exporters or local manufacturers often operate in producing regions for obtaining supplies immediately after harvest. The advantage of these comparatively sensitive markets will be available only to producers who are free to sell their produce in the way they think most suitable. A wide—preferably international—market, competitive purchase, good transport facilities, and freedom to sell enable even small producers to obtain fair market prices. This entire conjuncture is, however, obtainable only in a minority of cases, and on the whole, the dependence of the producer on the trading classes at all times is considerable.

This dependence is emphasized by the fact that the processing of most products is in the hands of classes allied to the trading and moneylending classes. Formerly some aspects of processing such as husking and partly milling and decorticating were conducted by the producers themselves; too, the whole economy was more nearly self-contained. With greater commercialization and the marketing of a large portion of some crops, processing began to be divorced from agricultural production, especially after power-driven machinery was introduced for most of these processes. Consequently, today in all areas where the crop is an important commercial crop, husking and milling, ginning and pressing, hulling and decorticating are conducted in centralized units operated and owned by nonproducers except in the rare instances where they are co-operatively managed. The one important instance of processing still remaining mainly in the hands of producers is that of the somewhat elaborate process of the manufacture of raw sugar from sugar cane. The key position of processors in the disposal of produce and the fact that they are usually able to combine among themselves for determination of terms of operation weakens still further the bargaining position of the agriculturist producer.

The productive organization of rural industry had many features in common with the organization of agriculture. It was conducted essentially on a family basis and drew usually on the supply of labor of the whole family. Its capital resources were meager, it tended to be underemployed, and the income yielded by it was consequently low. Attention needs to be drawn to one aspect of Indian economic organization in which it appears to differ from other similarly placed economies. The ordinary peasant household in India is not self-contained in relation to most industrial products and personal service needs. In this respect comparative self-sufficiency is the attribute not so much of the individual household as of the village community. The agriculturist aims at satisfying family and business needs by his own production so far as concerns food, fodder, and—one may add—fuel. For other products and services he depends on the specialized artisan or other families within the village community. The carpenter and the blacksmith, the potter and the cobbler, the barber and the washerman are all resident artisans entitled to a small part of the crop on the

threshing floor. Most of the repair work on agricultural equipment is performed not by the agriculturist households but by the resident artisan families. In a large number of cases the artisan families would also have small cultivated holdings and would thus be part-time farmers. This would be the pattern in all the large settled plains areas in most regions of India where social life was organized in substantial village communities. In mountainous areas where isolated dwellings or hamlets were the rule households would be somewhat more self-sufficient.

The complement of artisans integrated within the village community organization would not be the same everywhere; this would be related, in particular regions, to products and services required continuously by the peasant families. Other artisan industry whose products would be demanded only occasionally or periodically would not be so evenly spread and would not be connected integrally with the organization of the village community.

From the point of view of organization, rural artisan and cottage industry may be divided into two classes. The large majority of artisans who were scattered widely over the countryside lived in close proximity to consumers of their products and services and did not face complex problems of credit and marketing. To a large extent their work was connected with maintenance and repair of equipment; in a number of instances of original production, raw material was supplied to them by customers, and they got paid mainly for wage work. Not only would the majority of rural carpenters, blacksmiths, potters, and cobblers fall within the class but also basket- and rope-makers and even oilmen may be mostly included in it. Artisans of this class would also be most likely to be part-time farmers in many instances. Their field of operations would be limited to a village or a small group of villages and the nonmonetized sector in their business would be considerable.

The other class of rural artisans, though located in rural areas, would face problems of productive organization similar to those of traditional urban handicraft. The most numerous among these would be weavers of all kinds. This class of artisan or handicraft industry—rural and urban—would be dependent on the trader both for supply of raw material and sale of product and would need credit for carrying stock and for sustenance during the average length of the period of production. This credit would be almost invariably obtained from the trader at either the one or the other end, except in the not unusual cases where both ends of trading would be concentrated in the same class of trader. These artisan units would be even more dependent on the trading intermediaries than the peasant agricultural families, for there would be no element of self-containedness in their economy. In this class also transition would be made from organization on the family basis to the basis of a workshop; there would then emerge capitalistic owning of equipment and the employment of artisans on wage work away from their homes. Even when this capitalistic form of organization emerged, most of the artisans and handi-

crafts industries operated as long as it was traditional, within specially circumscribed limits.

These limits were set by technical considerations. In this respect the position of Indian artisan industry differed from that of Indian agriculture. At least as far as the domestic market was concerned Indian agriculture was not faced with competition from production which was the result of superior technique of agricultural units either within the country or outside it and, barring the notable case of indigo, domestic production of particular agricultural products had not been affected by technical industrial advance. Traditional Indian industry, on the other hand, had faced for a century or more, and continued to face, a market which was continuously shrinking at a varying pace as the result of increasing variety and cheapness of machine products. The continuous pressure of the competition of machine industry had compelled traditional Indian industry to adapt its methods, readjust its stages, and limit the variety of its products; but whatever the equilibrium reached at any time by these processes, it was liable to be upset afresh by further extension of the field of machine products, forcing traditional industry to further limitations and fresh adaptation. The survival within given limits of the traditional industry was itself dependent on taking partial advantage of modern industrial technique. Thus the weaver used machine-spun yarn; the metal worker, machine-produced metal sheets; and the leather worker, for the major part, leather produced in modern tanneries. And where improvements for strengthening the competitive position of traditional industry were proposed, these involved taking further advantage of modern technique. Such were proposals for setting up central reeling, winding, or sizing and warping plants for handloom weavers or for improved types of bullock-driven oilmills fitted with ball-bearings.

The most important result of these conditions was that traditional industry, whether conducted on the basis of the family or of the workshop unit, suffered continuously from underemployment or unemployment. The underemployment suffered by peasant agriculture was the result of limited land resources and a growing peasant population, giving a small and a diminishing holding per family unit. The underemployment in artisan industry was the result of a diminishing field of demand for the products of that industry. In both cases the situation was revealed in the low income per worker; all calculations indicated that the average income of the small-scale artisan industry unit in India was as low as the average income of the peasant agricultural unit.

The Industrial Revolution affected Indian agriculture primarily through increasing commercialization and monetization of agricultural economy. The first impact was through the increased demand created for agricultural products like cotton. The transport system in regions where these products could be grown was rapidly developed, and the incentive of a large money income led to extension of cultivation of par-

ticular crops in these regions. Beginning with few crops and regions the movement became, in time, widespread. As pointed out above increased commercialization or monetization did not essentially change the unit or organization of productive activity. It did not also materially influence technique. Some new crops were introduced, the varieties in many were improved, in particular regions a new implement like the iron plough made progress; but there was no technical revolution. The most important change was in the relative economic strength of the landlord, trading, and moneylending classes. The disappearance of the older political and social regulations and the establishment of the British judicial system strengthened the position of all these classes vis-à-vis the agriculturist producer and affected correspondingly the distribution of the increased incomes due to the commercialization of agriculture. During the last three decades legislative regulation has greatly undermined, in a number of regions, the position of the landowning classes. However, in spite of seeming policies to the contrary, the position of the trading and moneylending classes is as strong as ever, and they continue to derive the greatest benefits from every improvement in the terms of trade of agriculture.

The nature of the impact on traditional industry has been already indicated. The first influence was the increasing imports of products of machine industry. This led, in course of time, to the disappearance of many old handicrafts, urban and rural, and continuous narrowing of the field for most others. The efforts at survival of these led to many adjustments in production and adaptations in technique.

For the impact of foreign influences the initial process was the opening up of the country. The most important aspect of this was the construction of a railway system connecting the main ports with important agricultural regions. This was done by British capital either private or borrowed by the government. At the same time the road system was developed, and improved types of bullock carts were introduced. Thus within a few decades a revolution from the older system of pack-animal transport for internal trade was brought about. The main immediate effects of the development of this transport system were the distribution of imported machine-made goods throughout the country and the export of important raw products in increasing quantities. Indian traders participated from early stages in the distribution of imports and the collection of raw produce for exports; the foreign side of the trade was throughout the nineteenth century in European hands. Ancillary to trading activities were the credit institutions of the modern type, especially banks, mostly in the chief ports, established from the early days by the British. The first excursions in modern production activity were plantations—tea and coffee. In connection with the export of agricultural products certain processing activities were begun. Then followed exploitation of minerals and lastly manufacturing industry. Indians played almost no part in the nineteenth century in the development of plantations or mining. However, together with

internal trade, from the start Indian trading communities undertook processing activity in a large measure. One important feature of the development of industry in India was that in Western India, with Bombay as the nucleus, manufacturing industry developed in Indian hands from the very beginning. The chief reason for this seems to have been the presence of old established financial and trading houses and communities in Gujarat, Kathiawar, and Kutch which were ready to take advantage of the new opportunities. As a result, the cotton industry, which developed chiefly in Western India, was always predominantly in Indian hands.

Till World War I the policy of British government in India was dominated by somewhat peculiar "liberal" concepts which led to imposing of a counterbalancing excise on Indian cotton manufactures, the moment a small revenue duty was imposed on imports of British cloth and to the banning of even the establishment of an Industries Department by the government of a province. There were many other difficulties such as those in obtaining prospecting licenses, etc. in the way of progress of modern business in Indian hands. At the beginning of World War I, economic activity of the modern type was very limited in India. Manufacturing industry was represented chiefly by the cotton and jute textile industries, plantations chiefly by tea and only to a very small extent by coffee, mining by coal begun chiefly by and for railways and general engineering chiefly by railway workshops. There was also the processing and a small number of minor industries. All these except the cotton textile industry and processing were predominantly British owned and managed. Modern banking was represented by the Presidency Banks of British origin and branches of foreign banks; insurance was conducted mostly by foreign companies and coastal shipping by steamers was carried on mostly by British firms of either Indian or British registration.

During the first decade of the twentieth century Indian banks and insurance companies were first established and some change in policy of the state was brought about after World War I. Modern business in Indian hands steadily increased in volume and diversity during the interwar years. The Indian beginnings in each line were usually with the smaller scale operations; the British still continued to do the pioneering in most new fields. An important new development during this period was the establishment of subsidiaries by important international groups or units; this was part of a world-wide movement. Concerns like the Imperial Chemical, Unilevers, Dunlop (tires), Westinghouse Electric, General Motors, etc. established either completely owned subsidiaries or allied concerns in collaboration with Indian capital. During the interwar years activity of British and other foreign business interests did not recede. They continued to hold their main developed positions in the older fields and initiated many new ventures. However, Indian business grew at a much more rapid pace; hence its proportionate share had become substantial in most fields on the eve of World War II. Apart from the older fields

of jute manufacture and coal mining and plantations where Indians obtained significant shares, they made special headway in new lines such as iron and steel, hydroelectricity, cement, and sugar. Their growth in banking and insurance was vigorous; they began to participate in coastal shipping and took a substantial direct share in foreign trade. The number of stock exchanges in 1914 was three; of these Europeans dominated only the Calcutta Exchange. During interwar years stock-exchange business, mostly in Indian hands, grew in a large measure. And in all important centers in the country a number of commodity exchanges, in which the speculative element was important, also sprang up.

A more radical change in the situation came about in the forties as accompaniment to the withdrawal of British political power. Many Indian capitalist groups made large gains during wartime and were willing to offer favorable terms for the acquisition of British interests in all types of business. The somewhat uncertain future induced many British businessmen to seize the opportunity, and there was fairly large-scale transference of ownership and management from British to Indian hands. It is, however, possible to exaggerate the total effects of this transference. Details regarding transference of ownership are difficult to ascertain. However, British interests still continue to control the major portion of the jute, coal, and tea-plantation industry and have large and important units in most other manufactures. The activities of foreign banks and insurance and shipping companies continue to be important, and the sphere of operation of subsidiaries or Indian collaborators of the dominant international units or groups is not decreasing.

The existing structure of Indian economy contains within itself a large number of divergent elements. In each aspect it has, in particular, an important residue of pre-Industrial Revolution forms and usually also an important element of the most advanced industrial technique and organization. In transport, for example, side by side with the aeroplane, steamship, railway, and mechanical road transport, there exist country craft and bullock carts; and the share of both these latter continues to be very considerable. In finance and banking the indigenous system had been well developed in pre-British times for the conduct and finance of an extensive long-distance internal trade; money changing and a system of trade and financial bills were fully operative. With the extension of trade in agricultural products a connection had been established between urban indigenous banking and traders and agents in rural areas. Today there is, in the country, a modern monetary and banking system; there is a central monetary and banking authority in the Reserve Bank of India; and the Imperial Bank, whose growth has been state-sponsored, has an intermediate, somewhat anomalous position; the finance of international trade is still largely in the hands of branches of foreign banks, and within the country banking has developed in the direction of the concentration of deposits and business in the hands of a small number of giant concerns with a wide-

spread network of branches. Even so the banking system has not reached the smaller centers of trade and the ill-defined policy of government towards co-operative forms has not enabled co-operative marketing, processing, and banking organization to cover any substantial part of the field. The primary field of trading and finance still continues to be occupied, therefore, by surviving parts of the older system. The relation between the two systems is, however, not well articulated; and this makes for difficulty in proper regulation, and in the implementation of positive policy.

The development of modern industry has been on the usual lines of extension, mainly in textile and other consumer-goods industries such as sugar and vegetable oils. Because of specially favorable conditions and of tariff protection an important iron and steel industry and a cement manufacture have been established. Heavy chemicals, production of machinery, electric equipment, and other capital-goods industries are still in their infancy. The future progress is dependent on planned effort, whose direction and extent are, however, yet unclear. Today, though industrial production is much more diverse than it was two decades ago, its total extent is small in relation to size and requirements of the country. Employment afforded by modern industry is very small; the vast bulk of industrial employment is still in other forms. The total proportion of urban population—approximately 15 per cent—is itself an index of underdevelopment. Apart from modern large industry, towns afford employment in a large number of miscellaneous industries such as *bidi* or country cigarettes, bakeries or flour mills, or various branches of building trades; they also give occasion for a considerable body of modern types of workshop activity for repair, maintenance, etc. The main industrial employment, however, still comes from the traditional artisan industry of the types described above. In special instances new intermediate forms of industry such as the power-loom industry have arisen; but they are confined to few industries and localities and are not numerically important. Between the two fields of traditional and modern industry there is, however, little integration. Two types of rationalized arrangements have, for example, been reported from countries like Japan. One relates to the division of markets between the two types of industry and the other is the accommodation of traditional skill, cheap human labor, and domestic working by division of production by processes some of which are allotted to domestic industry in the structure of modern industry. Intelligent action on either line is not evident in India; hence the haphazardness of the process of transition and its associated social and economic costs are both enhanced.

In the early stages of industrial development, capital and management as well as technical personnel were all foreign. The displacement of foreign influence has come about in all lines; and today, excepting a small number of highly specialized experts, technical personnel is normally Indian. There are no special difficulties in the way of recruitment or training or in bringing about an adequate increase in the supply of such personnel.

Experience during war also shows that, when required, the minimum technical training of industrial labor even for munitions factories can be accomplished rapidly through intensive methods. The strength of trade unions in India is also not considerable and unless backed by state and legislative support they would, in the large majority of cases, find it difficult to stand up against employers and their associations. The total potential supply of industrial labor is very large indeed. The main difficulty in the way of its proper utilization seems to be the conditions of living and employment in the main centers of industry. The important point to notice in this connection is the heavy concentration of modern industry in India in particular centers and regions.

The initial development of the transport system was such as to lead to a concentration of modern business activity in the main ports. First developments in manufacturing industry also took place chiefly in the port areas. With later growth concentration in the ports, especially Calcutta and Bombay, has become particularly intense, and within the other centers in the country there has been an equal tendency to concentration and overdevelopment. This means that not only are there a small number of centers of modern industry but also that they are unevenly distributed; the economic life of large regions is thus practically unaffected by forces of industrialization. It also means that the social problems in the industrial centers are specially acute. Housing conditions are very bad, and family living is practically impossible for the bulk of industrial labor in most industrial concentrations. There is an entire absence of social-security services such as sickness or unemployment insurance or old-age pensions; this further makes it impossible to build up a permanently settled industrial labor force even in the largest cities. Ill health, instability, unnecessarily large and frequent movements of labor between the cities and rural areas of origin are natural consequences.

Another feature of the development of modern business is the concentration of trading and entrepreneurial activity in comparatively small sections of the total population. Because of the dominance of caste in Indian social life there has always been a high specialization of occupational distribution. The trading and financial castes have been always highly urbanized and have rarely undertaken directly agricultural or handicraft productive activity. However, it is these communities that had the resources and acquaintance with business technique required to venture in fields opened by modern business. A small number of these castes, therefore, chiefly supplied and continue to supply, in the main, those who occupy the field not only in trading and finance but also the entrepreneurial role in modern manufacturing activity. Caste and community bonds help to maintain and accumulate strength gathered in particular fields and also the extension of activities to others. As pointed out above, the crucial economic position in relation to agriculturists and artisan industry is also occupied by members of these communities. Members of the

industrial labor force and the technical personnel usually belong to entirely different sets of communities.

The Indian business castes have been habitually traders, financiers, and moneylenders. The demarcation between trade and finance was never sharp in India, and a large number of individuals and firms combined both functions. Because of the fairly rigid association of occupations with caste, none of these castes have traditionally engaged in what might be termed direct productive activity. They have always been highly urbanized, and their contact with agricultural activity has been confined to moneylending and trading. They have also not been directly engaged in handicraft or artisan activity. They traded in the raw materials required and the finished goods produced by artisans, and they might lend money to artisans or, perhaps, finance the whole field of activity in particular handicrafts. In the last case they would take on the entrepreneurial role; but this would not involve any direct participation in productive processes or activities, which would be left entirely in the hands of members of the traditional artisan castes.

Parsis alone among the important Indian business communities had a background which was in marked contrast to this. In pre-British times they had little share in banking or finance and were engaged to a considerable extent in both artisan industry and agriculture. Their entry into trade chiefly followed on their association with the British, and it is noteworthy that their first entry into modern industry, in Bombay City at the beginning of the nineteenth century, stemmed out of their initial employment as master carpenters in the shipyards by the British. The Parsis had the advantage of not being fettered by any of the numerous taboos and prohibitions associated with members of Hindu castes, and they adapted themselves quickly to new conditions after the advent of the British. They were employed largely as agents for supply and other needs by the British and were among the first Indians to enter modern industry.

Others who followed have mainly belonged to the traditional Indian moneylending, trading, and financing classes. The earliest among these were trading and financing classes from Gujerat. Gujerat cities were known for many handicraft industries; and Gujerat had, always perhaps, been one of the most urbanized regions in India. In agriculture also Gujerat was one of the richest and comparatively one of the least overpopulated tracts. The spread of activities of business communities from Gujerat in the modern field within their home region, in Bombay City, and in special fields all over the country has therefore been large. In a similar manner, trading and financing communities from among other parts of India entered modern business and industry in successive stages. To a small extent members of new professional classes which arose under the British entered this field, specially in the first decade of this century during the *Swadeshi* movement and after. They have, however, not yet effectively occupied a large part of the field of modern business.

At the present moment the most dominant single class in Indian business is that of Marwaris. These have been comparative late comers into the field of modern industry. The term "Marwaris" usually includes Jain and Hindu Bania communities originating in parts of the geographic area called Rajaputana or Rajasthan. The Rajaputana region is mostly arid and has not been able to support a flourishing agriculture or a large population. Also it does not lie on important international or internal trade routes. The economic activities for which Marwari communities are noted thus take place almost entirely outside the home region of these communities. Though they are found specially concentrated in certain regions, the Marwaris are more generally spread over the whole country than the Gujeratis or any other group of business communities. Another important fact regarding them is the part played by them as rural money-lenders in many regions of India. Members of other groups of business communities are usually not found as village moneylenders outside their home region. In most parts of India whenever there is an important alien element in rural moneylending this is usually that of the Marwaris. Some decades ago the chief center of Marwari activity in modern business was Calcutta. Since 1914 their share in modern business in Northern, Central, and Western India has rapidly increased; and they have recently made considerable headway even in Bombay City.

The differing traditions and backgrounds of different sections of Indian businessmen are important because they continue largely to mold the attitude and behavior of their members in the conduct of modern industry and trade.

The bias towards financial manipulation rather than production performance has been greatly accentuated by the general prevalence of the "managing agency" system. British companies who pioneered industrial and economic development in India on modern lines during the nineteenth century were usually formed and incorporated in England while their actual business was carried on in India. In the then prevailing conditions of transport and communication it was impossible for a British company directly to conduct this business. In the circumstances, there arose a practice by which British firms in India having British personnel continuously residing in the country undertook the actual conduct of the business in India on behalf of British companies. For this they were paid a commission and an allowance. This arrangement was called a managing agency, and in time the important British firms in India—the chief center was Calcutta—came to hold managing agencies of a number of companies and in various businesses. It also happened that initiative for floating British companies for particular projects was taken by the managing agency firms themselves. In this case the prospectus of the company would itself state who the managing agents of the company were intended to be, and the reputation of the agency firm would help the promotion of the com-

pany. The institution of managing agents thus arose out of a peculiar situation. When Indians and Indian companies entered modern business, the institution was naturally adopted from the British in India. In the early days when the capital market was undeveloped and Indian personnel experienced in managing modern business limited, the agency system had some justification, even though the business and the company were not separated by large distances. Also, in the days before the growth of modern banking, Indian managing agents, who were in origin mostly financing or trading firms, were useful in the supply of working capital to industry. Today the situation has changed completely and it is no more difficult for a company in India than in the United Kingdom to manage its business through a manager or a managing director. But the managing agency system is by now strongly entrenched, and it has in recent years served as a device by which rising financial groups have brought under their control established companies in a variety of industries and trades. Legislation was passed in the thirties which put a term—renewable, of course—to all managing-agency agreements and which indicated a basis on which commissions might be determined. Events of the last decade show that this legislation has not had much effect. Fresh legislation is at present under contemplation, but is encountering much opposition.

This feature of the situation gives a very peculiar turn to Indian developments. It helps to retain control of the productive organization primarily in the hands of financiers. And it leads to agglomerations or combines of a peculiar type. The trend in India is not, as elsewhere, for either horizontal or vertical combines round a central productive activity. Instead, there arise, because of the operation of the managing agency, large financial combines with a very mixed composition, since the link between the various members in the group has not been technical production or trading considerations but only financial opportunity. It has been calculated that towards the end of World War II the seven biggest managing agencies in India (four of which were British controlled) gave employment to more than 7 per cent of the total employed persons in modern plantation and manufacturing concerns in India and that the corresponding percentage for the first twenty was more than 14. It will be realized that concentration of this type made action as pressure groups much more effective than when the sphere of individual combines was confined to particular spheres of economic activity. The effect was intensified by the control by many of the biggest managing agencies of banks, insurance companies, and also newspapers.

Another feature of the Indian situation which helps concentration of economic power is that no legislation in restraint of monopoly has ever been enacted or even contemplated in India. Not only are there no laws comparable to the antitrust laws of the U.S.A., but even nothing on the pattern of the postwar antimonopoly legislation of the United

Kingdom has been thought of. As a matter of fact, government has found it convenient to deal with trade and industrial associations, has encouraged their formation, and has sometimes given them legislative recognition in such matters as price-fixing procedures. This has given an impetus to the formation of producer and trader associations in each important field of modern business, and the more influential of these have freely indulged in price-maintenance and price-raising activities.

The "State" and Economic Development in India

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THE SUBJECT of this paper is treated under six headings: (I) British Colonial Administration of India and Indian economic development; (II) British conquest and consolidation of the Indian Colony; (III) the India of the Prince States; (IV) capital investment and economic development in British India, 1858-1919; (V) political transition and economic stalemate; (VI) British-Indian finance.

BRITISH COLONIAL ADMINISTRATION OF INDIA AND INDIAN ECONOMIC DEVELOPMENT

India has been a case of arrested economic development, a fact which emerges from the various papers on Indian economic development prepared for this conference. Yet many of the basic factors which have led elsewhere to economic development were also present in India.

By the eighteenth century India had attained a high degree of development in preindustrial terms. Agriculture was sufficiently developed to support a relatively large number of nonagricultural workers; there were highly skilled craftsmen in iron, steel, textiles, shipbuilding, and metalwork. India produced manufactured goods not only for home consumption but for export. India's economic wealth had for centuries been controlled by merchant-bankers and princes who syphoned off the surplus of production over consumption in the form of idle hoards of gold and silver bullion; hence this wealth was sufficiently concentrated to represent a potential source of investment funds. India's resources of good-quality coal and iron were located in convenient proximity to each other. Moreover, beginning in the eighteenth century and becoming intensified in the nineteenth, British penetration and control brought to India modern business and political institutions, technology, capital, and administrative practices.

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Why did not this combination of apparently propitious circumstances produce a type of economic development capable of generating real momentum? Despite the many complexities and anomalies of the situation, basically, the answer is simple. The colonial relationship subordinated India to British political and economic interests; it stimulated Indian economic development in some ways and inhibited it in others. We will try to analyze this combination of stimulating and retarding influences which the colonial relationship embodied and which produced the hybrid economy of modern India which is, strictly speaking, neither developed nor undeveloped.

The British penetration of India, beginning in 1600, coincided with the period of the disintegration of Mughal power in Northern India. The British accelerated this process and played off one rival principedom against another until the British raj emerged supreme. After India became a colonial dependency of the British Empire, the administration of India was not responsible either to the Indian people or to Indian potentates but to the British; the real center of power was therefore London. Throughout the entire period of British control, imperial rule by a small island in the North Atlantic over a vast subcontinent in Asia meant the manipulation of groups and interests in India through the classic method of divide and rule, in order to maintain and bolster British power. It also meant that superimposed on all the internal pressures within India bearing down on the local administration (these having to operate through "passive resistance"—even before Gandhi—since the government was not responsible to Indians) was the added British pressure, which as we shall see was neither constant over time nor unitary. Eventually there came to be the following fairly distinct British interests: British civil servants, British businessmen in India, British businessmen in Britain, and the somewhat vaguer British imperial interest.

BRITISH CONQUEST AND CONSOLIDATION OF HER INDIAN COLONY

The East India Company, the instrument used in effecting the conquest of India, was a private British trading company with the privilege of monopolizing trade between India and England. The character of this institution, predating the industrial revolution by more than one hundred and fifty years, is important because it left a deep imprint on British-Indian relations and on Indian economic development. The Company became in fact the government of India, thus embodying a formal merger of the state and private enterprise which made it impossible to disentangle public enterprise and administration from private business. Adam Smith commented sharply on this paradox of a trading company, set up to make money for British shareholders, becoming the government of India:

It is the interest of the East India Company, considered as sovereigns, that the European goods which are carried to their Indian dominions should be sold there as cheap as possible; and

that the Indian goods which are brought from thence should bring there as good a price, or should be sold there as dear as possible. But the reverse of this is their interest as merchants. As sovereigns, their interest is exactly the same with that of the country which they govern. As merchants, their interest is directly opposite to that interest. . . . No other sovereigns ever were, or, from the nature of things, ever could be so perfectly indifferent about the happiness or misery of their subjects, the improvement or waste of their dominions, the glory or disgrace of their administration, as, from irresistible moral causes, the greater part of the proprietors of such a mercantile company are, and necessarily must be.¹

The operations of the East India Company in India involved subversion of local governments by threats and bribes in order to extort privileges for the Company's trade, a characteristic example being the exemption from inland duties which Indian merchants and manufacturers had to pay. This process undermined Indian merchants and the existing local governments by depriving them of revenue. As one area in India was thus subverted and taken over its treasury and revenue were used to hire the Indian soldiers to carry out the Company's military conquests in other parts of India. Bengal paid many of the Company's bills for the subjugation of Bombay and Madras. The revenue of Bengal was also used to purchase Indian goods for export by the Company. Thus, instead of revenue resulting from trade, trade depended on revenue.² In the late eighteenth century there was a steady drain of both goods and wealth out of Bengal, with virtually nothing coming in in return.

The East India Company clashed with the home government's mercantilistic policies and prejudices. These favored the production of manufactured goods in England and their export in return for raw materials and bullion, while the East India Company on the other hand stood to gain by the export of Indian textiles, which led to a drain of bullion out of England.

This opposition between the Company and the British government became accentuated with the triumph of the Industrial Revolution in Great Britain in the nineteenth century and the demands of Britain's rising middle class to have an opportunity to participate in the lucrative trade with India. To Britain's growing industrialist group India became increasingly valued as both a market for British manufactured goods and a source of raw materials and food. As the president of the Manchester

¹ *Wealth of Nations* (1776), Book IV, chap. vii; Book V, chap. i. (In order not to burden the text with footnotes, I have cited references only in the case of direct quotation.)

² The term "the investment" had a specialized meaning in this period: it referred to the amount of revenue derived from the Company's territorial operations which was made available for purchase by the Company of Indian goods for export to Britain.

Chamber of Commerce declared (in 1840): "The whole question with respect to our Indian trade is whether they can pay us, by the products of their soil, for what we are prepared to send out as manufactures."³ These pressures for greater quantities of Indian resources and the development of India as a market for British goods resulted in 1815 in partially opening up India to the free private enterprise of British traders through the abolition of some of the monopoly privileges of the East India Company. In 1833 the Company was forced to cease its trading activities; and a 10½ per cent dividend on outstanding Company stock became a first charge on India's annual revenue.

Very gradually from the late eighteenth century to 1858 the Company's political power diminished. Its role became limited to the local administration of policies determined by the Board of Control appointed by the Crown, though the Company still was able to wield considerable power through its control over patronage. Eventually the two functions of administering India and making money out of India became technically distinct.

However, the dichotomy between the active, dominating role of the British in India, whether in administration or private enterprise, and the passive, subject role of the Indians has always been more fundamental than the usual Western dichotomy between private enterprise and the state. As Lord Curzon genially expressed it to the British tea planters in India:

I look upon all Englishmen in this country (and if any Scotchmen or Irishmen are present, pray do not let them think that I am excluding them) as engaged in different branches of the same great undertaking. Here we are all fellow-countrymen, comrades, and friends. The fact that some of us earn our livelihood or discharge our duty by the work of administration, and others by cultivating the soil, does not differentiate us one from the other. These are merely the sub-divisions of labour. They are not distinctions of object, or purpose, or aim.⁴

The coming of unrestricted British enterprise to India precipitated the development of the Indian economy on colonial lines. In stepping up the supply of raw materials, the British stimulated Indian economic development. In pressing for the conversion of India into a market for British manufactured goods, the British inhibited India's own manufacturing industries and gradually converted India into an agricultural hinterland of Great Britain.

The exports of Indian textiles, which had soared under the Company's drastic methods for pressing the weavers into the Company's service and for engrossing the trade, reached their zenith in the year 1798/99 when the Company sold over £3,000,000 worth of Indian piece goods. By 1832 India's trade position was reversed. Instead of being an

³ Quoted in R. P. Dutt, *India Today* (New York, 1947), p. 105.

⁴ Quoted by B. C. Pal, *The New Economic Menace to India* (1925), p. 80.

exporter of manufactured cottons, she became on balance an importer. The chief force behind these developments was Britain's industrial revolution and the chief instrument was British private enterprise, both in Britain and in India. But these so-called "natural" economic phenomena were aided and abetted by government policy.

During the period from 1800 to 1850 there was in force an elaborate network of mercantilist provisions designed to aid British textiles and bring money into the British treasury, and also having the effect of penalizing Indian textiles in British markets, in foreign markets, and even in Indian markets. These provisions included high import duties ranging from 40 to 60 per cent on textile goods coming into Great Britain, which effectively shut the British market to Indian manufacturers. Consequently Indian exports had to go to foreign countries. The excise tax on Indian exports was doubled if the goods were carried in foreign ships. If carried in British ships the goods had to pay the monopoly freight charges of the East India Company plus a toll levied on all goods brought to Britain for re-export. Even within India, British textiles had to pay only a small $3\frac{1}{2}$ per cent ad valorem import duty while local manufacturers and traders in Indian textiles had to pay anywhere from 6 to 18 per cent ad valorem inland transit duties, duties from which British traders were exempt.

With the triumph of the laissez faire philosophy in Britain most of this discriminatory legislation was eventually repealed but not before India had been converted into a textile-importing country. In fact during the years 1800-25 mercantilist-type regulations were more onerous than in the preceding period. In 1840 the British held an investigation—amounting to an autopsy—on the state of Indian industry and the impact of this discriminatory legislation. A Mr. Brockelhurst, a representative of the British textile industry, testified very candidly that the damage was already done and noted the fact that "weavers, either in the one country or the other, must be sacrificed."⁵

It is of course hard under any circumstances to keep an export market in the face of more mechanized industries in other countries. India's colonial status and political impotence precluded her taking any of the corrective or retaliatory measures to which sovereign countries resort either to push exports, insulate the home market from foreign manufactures, or develop home industry to the point where it can compete with foreign industry on equal terms.

The East India Company did take certain steps which furthered Indian economic development and increased India's raw material exports. As the British conquered a section of India, they established British peace, law, and order. They transformed the institutional framework of India in the interests of a private enterprise type of economic development. Western legal institutions turned the land of India into a commodity which could be bought and sold and used as collateral for loans. The

⁵ Quoted in Lajpat Rai, *England's Debt to India* (New York, 1917), p. 139.

sanctity of property and the freedom of contract were established and enforced by British courts backed by British power. The gradual elimination of export duties and inland transit duties and tolls also stimulated trade and widened local markets, as did the standardization of the currency. The Company took the initiative in expanding India's plantation crops, bringing in indigo planters from the West Indies and encouraging tea growing after 1833, when the Company lost its monopoly of the China tea trade. The Company invested some capital in tea plantations, enabled the British to buy land in India after 1834, and sold land for tea plantations to retired British army officers at nominal rates.

It is not easy to estimate accurately the full impact of British innovations on the society and economy of India, since, to quote an American authority on Indian history, "We know little about the structure and economy of the society—or were they 'societies'?—which the British conquered."⁶ There was apparently great diversity in pre-British India, but generalization seems clearly justified: pre-British government was essentially static, in the sense that village life went on more or less the same though conquerors came and went. So long as the village paid its customary tribute to the local potentate, it was largely undisturbed.

One major effect of British rule was to weaken village autonomy and village organization. The British strengthened the tax collectors and regularized tax payments, collecting in bad years as well as in good years. They substituted the payment of revenue in cash for payment in produce, thereby stimulating the production of cash crops. Making land alienable and providing British courts to enforce the alienability of land also contributed to undermine the customary authority of village elders and village councils. This legal shift from status to contract and the British pressure behind it, with its desire for increased revenue and wealth from India, made the British administration of India far more dynamic than previous governments. As a result of the extension of British control and more efficient tax collection, gross revenue (land revenue constituting 50 per cent) grew from 8.2 million pounds in 1792/93 to 31.6 million pounds in 1856/57. India's foreign trade and the excess of exports over imports increased.⁷

Year	Imports of Bullion	Excess of Exports	
	and Goods	Exports	over Imports
Annual average for the			
period 1760-80	£ 390,000	£2,100,000*	£1,710,000
1847	6,000,000	9,500,000	3,500,000

* Value of goods sold at East India Company sales exclusive of China tea.

⁶ Daniel Thorner, "Recent Books on India and Pakistan," *Middle East Journal*, VI (Winter, 1952), 90.

⁷ Figures for 1760-80 are from C. J. Hamilton, *The Trade Relations between England and India, 1600-1896* (Calcutta, 1919), pp. 258-259. Figures for 1847 are from a statement in the Parliamentary Report of 1853, quoted in Lajpat Rai, *op. cit.*, p. 77.

Because of the complete lack of statistics it is impossible to ascertain whether the initial impact of this dynamism was to stimulate total output or merely to channel more of it to England. The views of the government of Madras on the subject were embodied in a letter written to the Court of Directors of the East India Company in London in 1814:

The grand difference between the view at present taken in England regarding Indian land revenue and that taken here, seems to be, that in England the fear is that the public demands upon the resources of India may not keep pace with its prosperity; while here the universal sentiment, we believe without any exception whatever, is, that the prosperity of the country is so much depressed by the public demands, that, without the most liberal and judicious management, there is more danger of its resources declining than room to hope for their speedy increase. This is a sentiment which we cannot too strongly convey to your Honourable Court.⁸

This plea shows the British administrator in India performing a middle-man's function between Indian reality and the Company's desire for unlimited returns from the Indian operation. Bishop Heber wrote even more forcefully in his *Memoirs and Correspondence* in 1830 concerning the unenviable go-between role of the British official in India and how the average administrator resolved his dilemma:

The fact is, no Native Prince demands the rent which we do, and making every allowance for the superior regularity of our system, etc., I met with very few men who will not, in confidence, own their belief that the people are over-taxed, and that the country is in a gradual state of impoverishment. The Collectors do not like to make this avowal officially. Indeed, now and then, a very able Collector succeeds in lowering the rate to the people, while by diligence he increases it to the State. But, in general, all gloomy pictures are avoided by them as reflecting on themselves, and drawing on them censure from the Secretaries at Madras or Calcutta, while these, in their turn, plead the earnestness with which the Directors at home press for more money.⁹

In one respect British rule of India during the East India Company era was clearly not dynamic: public works were not pursued vigorously. Some trunk line roads were built and a few modern irrigation works but on the whole the state was reluctant to commit itself to any extensive scheme of state irrigation. According to the Report of the Public Works Department 1860/61, "Its [the Company's] practice of providing for such projects out of current revenue prevented any regularity or continuity of work and, on the contrary, often resulted in considerable waste from

⁸ Quoted in Lajpat Rai, *op. cit.*, p. 210.

⁹ II, 413.

suspension of valuable works already undertaken."¹⁰ The Commissioners on Public Works in Madras reported in 1852 that old irrigation works had been allowed to deteriorate. "To whatever part of the country we turn, we find the vast majority of tanks, even in a good season, watering far less land than they once did, and far less than they could now irrigate, if kept in proper repairs; and there is abundant evidence to show that if the existing tanks were restored to their original capacity of efficiency, a very high increase of cultivation and revenue would be the result."¹¹ Total expenditures in India grew likewise from 6.9 million pounds to 28 million pounds between 1792 '93 and 1856/57. But most of the expenditure was consumed in military expenses (10.8 million pounds in 1856/57, the last year before the rebellion) and in general administration, leaving only about 3 million pounds for "public works," which included buildings, roads, other public works, repairs, and military buildings.

There was apparently no appreciable movement of British capital to India during the early years of British rule, even though interest rates in India were extremely high. Rather, money was made in India and remitted to England. According to testimony before the Committee of East Indian Affairs in the House of Commons in 1830: "India requires capital to bring forth her resources; but the fittest capital for this purpose would be one of native growth and such a capital would be created if our institutions did not obstruct it."¹² To the question "Do you think more capital would not go to India if the restriction on Europeans resorting to India was altogether removed?" one witness, W. B. Bayley, replied: "I do not think that capital would be sent from England but I think that capital which would otherwise be remitted to England would probably remain in India."¹³ There is no reliable estimate of how much British capital was in fact reinvested in India for the period of East India Company rule or subsequently.

India's public debt, incurred to meet miscellaneous expenses, doubled during the period 1834 to 1858, when it stood at 69 million pounds, of which over 60 million pounds were held in India, most of this debt being owned by Britons residing there. India had several million pounds of sterling commitments which she had to meet each year, £4,500,000 in 1857/58, but interest on the public debt was only a tiny fraction of this total. Most of the sum went to pay dividends on East India Company stock, furlough and retirement pay to military officers, cost of transportation of troops, and "general charges," which included a great miscellany of items. Some were indeed related, if remotely, to India, such as the charge for the maintenance in Britain of European lunatics returned from

¹⁰ Quoted in Parimal Ray, *India's Foreign Trade Since 1870* (London, 1934), p. 34.

¹¹ *Ibid.*

¹² Quoted in "Notes on 'Drain' of Wealth from India," *Modern Review*, XLVI (Oct., 1929), 464.

¹³ *Ibid.*

India; other items reveal no conceivable connection, such as part payment of the pensions of persons connected with the Saint Helena establishment in the South Atlantic.

British rule in India was somewhat uneasily characterized by the British historian, H. H. Wilson, who, writing in 1848 at the end of the East India Company era, thus attempted to balance the two sides of the account:

It is by this inherent and irremediable defect, i.e., the unnatural rule of foreign masters, that the main faults of the Indian Government—the costly and complicated machinery of an administration ill suited to the conditions of the society on which it has been forced—the slow and imperfect distribution of justice, the feeble and vicious organisation of the police, the perpetual and exhausting drain upon the public revenue—are to be accounted for; and not by any want of wisdom or benevolence in those who have been entrusted with the prosperity of India, and who have always assiduously and earnestly laboured for the good of the people. Nor have they laboured in vain. For, although the country has suffered many and great disadvantages from the substitution of strangers for its own functionaries, its own chiefs, its own sovereigns, it has been, in some degree, compensated for their loss by exemption from the fatal consequences of native misrule—by protection against external enemies—by the perpetuation of internal tranquility (*sic*)—by the assured security of person and property—by the growth of trade—the increase of cultivation—and the progress, the introduction of the arts and sciences, the intelligence and civilisation of Europe.¹⁴

THE INDIA OF THE PRINCELY STATES

The Indian rebellion of 1857 proved a turning point in the history of British rule. Thereafter the East India Company ceased to function, and complete responsibility for Indian affairs rested with the British crown. The Indian territory under British rule, previously divided into Presidencies, was united into British India under a uniform British administration. Considerable British capital poured into India and some development took place. Public statements tended increasingly to minimize the advantages derived by Britain from her Indian empire and stressed instead the role of the British being in India to "help" the Indians.

The rebellion, due in part to the disaffection of certain princes with British rule, resulted in a new British policy. Henceforth British paramountcy was proclaimed to mean the protection and maintenance of the remaining princes. The British now undertook to protect the Indian princes—from each other and even from themselves, since the British

¹⁴ Quoted in Pramathanath Banerjee, *Indian Finance in the Days of the Company* (London, 1928), p. 336.

reserved the right to interfere in extreme instances of princely excesses. Each prince had a British advisor at his shoulder. At first the princes somewhat resented paramountcy, which denied them the reality of power while leaving them with the fiction. Later their attitude shifted as they came to regard the British as their main bulwark against the pressure from their own underlying populations for democratic government and economic reform.

After 1858 there were two Indias: British India, which borrowed extensively from British administrative practices and experience and was governed autocratically by British subjects, and the India of the States, ruled autocratically by Indian princes and their retainers, containing some six hundred states with one fourth of the population and two fifths of the area of the Indian subcontinent. The India of the princely states was not a uniform entity as was British India. Some states adopted Western administrative methods, others did not; some had no systematic budgetary procedure at all. There was far greater disparity between states than between provinces of British India, in size, in relationship to the British raj (some had a greater degree of autonomy than others), in amount of Western influence, and particularly in degree of economic development and progress. In literacy, the over-all average was slightly lower in the states than in British India, where in 1941 it was 15 per cent. But some states, such as Travencore, had a literacy rate far higher than any in British India. The advances in industry made under government sponsorship in the state of Mysore were a source of pride to Indian nationalists; many other states were extremely backward.

Freezing the political status quo in princely India had far-reaching effects on Indian economic development. Within the states, development was impeded by the fact that many were tiny enclaves too small to be viable economic units. To give an extreme example, the present state of Saurashtra, with four million people and 37,000 square miles of territory, was formed after Indian independence by pooling 221 of the former princely states.

According to virtually all available indices the states were in general more backward than British India; in proportion to population they had less modern industry, irrigation in agriculture, electric power, use of improved seed cultivation, productivity in agricultural output per acre (with two exceptions, rubber and sugar cane), public works, and invested foreign capital. It was harder for the states to borrow capital as they had to pay a higher rate of interest, the price of semiautonomy. The recent integration of the princely states has brought out some of the salient differences between British India and the India of the States. The former states are by and large deficit areas; considerable money has to be spent to bring their social services up to the level of British India. There was little or no income tax in the states, the chief sources of revenue being taxes on land and consumption, and customs duties. The

Central government is now allowing the states from two to five years in which to introduce or revise upward their income tax schedules to bring them in line with those prevailing in British India.

Princely India had an inevitable impact on development in British India. In the first place the way of life of the princes, carried over from feudal times, set a style of lavish expenditure and economic waste which negated the values of enterprise, innovation, saving, investment, and development. Furthermore, the division of India proved a stumbling block to uniform administration since most of the states were not off by themselves but interspersed within British India like a checkerboard.

The Joint Parliamentary Committee on Indian Constitutional Reforms (1933-34) pointed out, for example, that certain of the larger states depended for revenue on customs duties and, in the event a state had a port, this necessarily prevented India having a co-ordinated tariff policy. The existence of semiautonomous states prevented the extension to all India of a common body of law—covering labor legislation, company law, banking law, copyright and trade mark law and so on—and prevented the integration of the transport system or even in some cases the currency system. The committee concluded:

Conditions such as these, which have caused trouble and uneasiness in the past, are already becoming and must in the future increasingly become intolerable as industrial and commercial development spreads from British India to the States.¹⁵

But the purpose in retaining princely India had been the political one of creating islands of support for British rule. The states were set up as friendly fortresses, and they remained loyal to the very end. In assessing the objectives of imperial Britain, we should perhaps emphasize the political success of the India of the States rather than its economic backwardness as experienced by its people.

CAPITAL INVESTMENT AND ECONOMIC DEVELOPMENT IN BRITISH INDIA, 1858-1919

Despite the drag exerted by princely India, the period 1858-1919 witnessed considerable expansion and growth of the Indian economy as a result of British capital pouring into India to build public works and exploit Indian resources. In 1846 the Under-Secretary of the government of India had asked:

Is it possible that England will send to India the enormous sums which may be required for railways? Other countries have effected works of great magnitude out of their own wealth, but India must look to England for the necessary capital. She must ask back a

¹⁵ Quoted in M. C. Mather, "The Genesis of Fiscal-Financial Integration of the States," *Indian Journal of Economics*, April, 1951, p. 420.

portion of the tribute which for years past she has paid to England—will England be ready to meet the demand?¹⁶

The answer was "Yes." The British invested large sums in Indian government bonds in response to the new administration's fiscal reforms, which set up two systems of accounts, current and capital, charging such undertakings as irrigation works to capital account; and divided India's public debt into two categories: productive debt backed by income-yielding assets such as irrigation works, and ordinary debt, which was systematically retired. The British invested heavily in Indian railways, originally private undertakings with a 5-per-cent public guarantee by the Indian government; later the private companies were bought out by the Indian government. According to the estimate of Sir George Paish,¹⁷ British investment in India and Ceylon in 1909/10 was as follows:

Government bonds	£178,995,000
Railways	136,519,000
Tea and coffee plantations	19,644,000
Rubber	4,610,000
Mines	3,531,000
Banks	3,400,000
Commercial and industrial	2,647,000
Miscellaneous municipal bonds, tramways, telegraph and telephone, gas and water, electric light, and power	16,053,000
Total	£365,399,000

This investment and these public works stimulated economic development, foreign trade, and the apparatus of government, as reflected in the growth and changing composition of revenue and expenditure.¹⁸ Be-

¹⁶ Quoted in Daniel Thorner, *Investment in Empire* (Philadelphia, 1950), p. 69.

¹⁷ Sir George Paish, "Great Britain's Capital Investments in Individual Colonies and Foreign Countries," *Journal of the Royal Statistical Society*, LXXIV (1910-1911), 186. The structure of British investment in India resembled that of British investment elsewhere, the chief difference being that a much higher proportion of Britain's investment in India enjoyed a public guarantee; this prevented the heavy losses in overseas railway investment which British investors suffered elsewhere. Paish considered that the total Indian investment represented about 11 per cent of Britain's entire overseas investment. Measured in per-capita terms this investment was minute, £1.2 per Indian as compared with Britain's investment in Canada, Australia, and South Africa, which came to £55 per inhabitant. Actually, it is impossible to measure British investment in India because of the difficulty of calculating the amount of reinvestment of profits made in India. Estimates for the end of the twenties and the beginning of the thirties range anywhere from 354 million pounds to one billion pounds depending on the methods used and the bias of the estimators.

¹⁸ Total revenue and expenditure increased from 43 crores of rupees in 1861 to 208 crores in 1938 (uncorrected for changes in the price level). For a long time land revenue was the major source of revenue but by the end of this period

tween 1865 and 1914 the monetary value of exports grew by almost 400 per cent.

Development was particularly marked in the first fifteen years of the twentieth century when several favorable factors operated simultaneously. According to estimates made by S. Y. Pandit in *India's Balance of Indebtedness*, 1,729 million rupees of capital were raised in the London money market during this period (one-half invested in government bonds, one-half in the securities of commercial enterprises and industrial concerns); 229 million rupees of private capital were withdrawn from India, leaving a net of 1,500 million rupees. There was a gradual rise in prices, with the price of raw materials India exported rising more rapidly than the price of manufactured goods she imported. Stimulated by this favorable economic situation and the unofficial *swadeshi* movement to encourage and patronize Indian enterprise, joint stock companies which engaged in modern business and deposit banking on Western lines forged ahead with some Indian participation especially in the western part of India. Imports of both commodities and treasure more than doubled in value during this fifteen-year period, as did exports. The average value of imported goods for the period 1910-14 equaled 1,530 million rupees, of which 40 per cent was textiles; the average value of exports was 2,283 million rupees, the big items being food and raw materials—rice, wheat, tea, seeds, hides, and, above all, raw cotton and raw jute. India exported some jute manufactures and a small amount of cotton textiles (5 per cent of total exports).

In response to British administration and British capital some modern industry developed in India but it was unable to establish and maintain a significant rate of growth. Why?

The extension of the market, a vital prerequisite to modern economic development, did not prove to be a sufficient cause. This may have been in part due to the way railways came to India. Though the state had to bear the risks of Indian railway development, the burden amounting to 50 million pounds by 1900 when the railways became paying propositions, the planning of India's railway network was in no way related to any all-round, integrated development. India suffered some of the disadvantages without reaping the valuable benefits of state responsibility for railway development. The railways were not unplanned; rather they were planned with British ends in view, as outlined by an important advocate and architect of India's railways, R. M. Stevenson:

The first consideration is as a military measure for the better security with less outlay, of the entire territory, the second is a

customs duties outstripped land revenue and income taxes emerged as a poor third. On the expenditure side defense remained the largest single item but became proportionately somewhat less toward the end of the period; debt charges grew as did expenditure on education, health, and agriculture, though these last three items were never large.

commercial point of view, in which the chief object is to provide the means of conveyance from the interior to the nearest shipping ports of the rich and varied productions of the country, and to transmit back manufactured goods of Great Britain, salt, etc., in exchange.^{18a}

The layout of the railways favored the chief ports, Bombay, Calcutta, and Madras, giving India three rival capitals, and sacrificed interior cities which either had no rail connection with other interior cities or had connections via a different railway gauge, making transshipment expensive. The rate structure also favored the long haul of food and raw materials to the port and of British manufactured goods inland from the port.¹⁹

Thus the extension of the market via railways rather than stimulating a well-rounded development of the Indian economy had the effect of extending and strengthening the complementary colonial relationship between the British and Indian economies. Traditional methods of production in both industry and agriculture were left largely intact save for a belated fringe of modern industry in textiles—cotton mills owned mostly by Indians in Bombay and jute mills owned entirely by Britons in Calcutta.

The great impetus to the revolution in transport did not grow out of indigenous forces. It was a hothouse growth urged on India from abroad by groups in Britain and by British merchants in India whose economic base was overseas. Japan provides an excellent example of the impetus coming from within and leading to a simultaneous and synchronized attempt to improve transport and transform industrial production techniques.

While the government of India played an active, dynamic role in bringing about the revolution in transport and communication, it played a completely passive role in relation to the development of modern industry in India. Yet the same arguments used by British traders and investors to persuade the Indian government to assume responsibility for Indian railway development—lack of enterprise in India, lack of venture capital, and the uncertainties of the economic outcome of the outlay on the railways—applied with equal force to the necessity for active government support of industrial development if any industrial development were to take place. British traders organized into the Bombay and Bengal Chambers of Commerce, for a long time the only powerful business pressure groups in India, had been very successful in getting the government to improve transport and communication—roads, canals, port facilities, as

^{18a} Quoted in Thorner, *op. cit.*, pp. 48-49.

¹⁹ Mr. Chandler Morse, in his comments on my paper, pointed out that some of the impetus for state underwriting of railway and irrigation development in India came from the desire of British administrators to stabilize revenue and stave off the recurrent famines which made the administrator's job so difficult. In line with Mr. Morse's helpful comments I have tried in the present version of this paper to give due weight to the British administrator in India as a separate genus.

well as the railroads. As agents of British manufacturing and trading companies, however, they had no interest in furthering any policy of government aid to industry. The Bombay Chamber of Commerce was successful in obtaining a lowering of textile duties in 1860, pointing out that "the maintenance of so high a duty as 10 per cent on manufactured goods was fast tending to diminish the consumption of British fabrics and giving an artificial stimulus to native production, in support of which statement it pointed to the fact that in the last twelve months joint stock companies with an aggregate capital of 69 lakhs of rupees had been set on foot for the building in the Bombay area of cotton spinning and weaving mills."²⁰

Some British administrators saw the need for government initiative in encouraging the development of industry. The Famine Commission Report in 1880 urged a policy of government encouragement of industry and government action in the field of modern technical training. The Report was not heeded. Some forty years later the Industrial Commission Report made similar recommendations. In commenting on the fact that no provision was made for training mechanical engineers in India's railway workshops, the Industrial Commission noted in 1918 that there was no demand for such training "owing to absence of visible prospects for its recipients."²¹ Skilled jobs were reserved for Britons.

On the local level some officials tried to do something to improve the techniques of processing India's raw materials, but these efforts did not receive the blessing of the Secretary of State for India. The attempts of the Madras government to give industry assistance by the setting up of pilot projects to demonstrate better methods of tanning leather were successfully resisted by British business groups in India. To quote from the Industrial Commission Report:

These numerous activities [by the Government of Madras] aroused the opposition of the local European commercial community who interpreted them as a serious menace to private enterprise and an unwarrantable intervention on the part of the State in matters beyond the sphere of Government.²²

Thus the traditional British aim of developing India as a market for British manufactured goods in return for India's food and raw materials was achieved by the combination of an active state policy in the fields of transport, communication, and irrigation development with a passive state policy in the name of *laissez faire* with respect to industrial development. It was possible to achieve the old goal of mercantilism without imposing any restrictions of a mercantilist character. Government

²⁰ F. J. R. Sullivan, *One Hundred Years of Bombay, History of the Bombay Chamber of Commerce 1836-1936* (1937), p. 63.

²¹ Indian Industrial Commission, *Report* (London [printed in India], 1919), p. 26.

²² *Op. cit.*, p. 70.

passivity took two principal forms: absence of government aid to industry, and absence of any direct effort to alter the caste basis of India's social structure. Political considerations, among them the desire to win the allegiance of India's upper classes or at least to prevent the possibility of another Sepoy rebellion, figured importantly in this policy of deliberate nonintervention in the caste problem.

Caste, an extreme form of status society, almost wholly precludes development via private enterprise since it denies both the possibility of fulfilling the incentives of private enterprise—rising in the social scale by enterprise and wealth—and even the access to enterprise through entry to different occupations. While in Western society the freedom to enter different occupations may be in practice often inadequate, the absence of this freedom slams the door to the goal of private enterprise even as an ideal, let alone a reality. The British policy of *laissez faire* with regard to India's social order made virtually impossible the emergence of a *laissez faire* type of economic order in which the momentum for change is generated by private enterprise.²³

India's colonial status in itself militated against the emergence of Indian enterprise in that it induced a feeling of impotence in the subject peoples—greatly intensified in the case of India by the drawing of the color line and the widespread British assumption that Indians belonged to an inferior race. F. J. Shore of the Bengal Civil Service had pointed out the absence of Indian enterprise in the early nineteenth century:

But because the Indians are in the present day so far behind us in arts and sciences, we are not justified in concluding that they are not capable of improvement were circumstances favourable to them. Complaints are made that whatever is to be done, an appeal is made to Government—a road, a school, a charitable institution—everything must be done by Government! How can it be otherwise? In England where so much wealth is possessed by the community, diffused over all classes, and where there are local authorities to superintend them, the greatest improvements are planned and executed by private individuals; but in India, where the Government grasps at everything and leaves the people only a bare subsistence, having destroyed almost every local authority which formerly existed, and where the interests, that is, the immediate interests, of the rulers are very different from those of the governed, the people have a right to expect that some small part of what is taken from them shall be expended on their benefit.²⁴

India's colonial status prevented her from following the path taken

²³ For a fuller discussion of the Indian social structure and the impact of India's caste system on business enterprise, see the papers prepared by D. R. Gadgil and Kingsley Davis.

²⁴ F. J. Shore, *Notes on Indian Affairs* (London, 1837), II, 515-516.

by sovereign countries such as Germany who, attempting industrialization in the face of the competition of Britain's already established industry, took two related measures: (1) the extension of the market by the removal of obstructions to internal trade and the cheapening of transport, and (2) the insulation of that market from British competition by means of a tariff wall. In the name of free trade, India was denied the prop of tariff protection to new industries, though Indian business wanted tariff protection. The Indian case provides an interesting instance of an ideology affecting economic development, but it was the ideology of the conquerors of the country rather than of the country itself.

The story of the tariff issue in relation to textiles, India's first modern industry, dramatically reveals the pressures behind the policy of government passivity with respect to Indian industrial development and the different strains of British interest. In 1875 cotton textile interests in Britain, alarmed at the growth of Indian textile mills, demanded that the last remaining low duties on textile imports into India be removed. Opposing them were Indian textile interests and even some British groups in India. On this occasion the British bureaucracy in India, wishing to retain these duties for revenue purposes, also opposed the Lancashire demands. Lancashire won, however, and the duties were removed. Public opinion in India was incensed. As one Englishman, Sir Alexander Arbuthnot, pointed out:

Nor is this feeling limited to the Native community. From communications which have been received from the Chambers of Commerce at Madras and Calcutta, it is evident that the feeling is shared by the leading representatives of the European mercantile community in those cities. It is equally shared by the great body of the official hierarchy throughout India. I am convinced that I do not overstate the case when I affirm my belief that there are not at the present time a dozen officials in India who do not regard the policy which has been adopted in this matter as a policy which has been adopted, not in the interests of India, not even in the interests of England, but in the interests or the supposed interests of a political party, the leaders of which deem it necessary at any cost to retain the political support of the cotton manufacturers of Lancashire.²⁵

It was on the question of textile tariff policy that Lord Northbrook, then Governor-General of India, resigned after a dispute with Lord Salisbury, Secretary of State for India. Northbrook had maintained that the government of India, not London, should decide questions of India's tariff policy and had been overruled by Salisbury. Later, in 1896, a small duty was reimposed on cloth imports for revenue purposes. On the insistence of British textile interests in Great Britain, an excise duty of

²⁵ Quoted in Lajpat Rai, *op. cit.*, pp. 148-149.

equivalent amount was imposed on India's machine-made textiles, which meant that India's leading modern industry was discriminated against in relation to the traditional sector of the textile industry.

But the textile industry, being a light industry dependent on cheap labor—of which India had a great abundance—did survive government neglect and discrimination though it never grew and flourished as the dynamic Japanese textile industry did. The free-trade policy, basically unmodified until the 1920's, imposed a greater burden on other industries.

Far more significant though less dramatic than the textile story is the story of the Indian iron and steel industry; less dramatic because there *was* no Indian steel industry for a long time; more significant because heavy industry supplies the base for an integrated industrial development in which one industry provides the raw materials and the markets for other industries. There was no steel industry until 1907 when the Tatas, a Parsi group, began producing a small amount of steel.

For the successful launching of an integrated industrialization program probably considerably more than mere tariff protection would have been required: government aid in mobilizing the necessary capital and a government purchasing policy favoring home industry. In India public purchasing was in the hands of British administrators who did not have a government-stores policy directed toward encouraging Indian industry through placing of government orders and who with few exceptions bought British products. This meant that there was no possibility that Indian railway construction would stimulate heavy industry as it had elsewhere by its demands for rails, locomotives, passenger cars, etc. Thus some of the potentially expansive effect of railway construction had been lost. On the eve of World War I, India's industrial sector was small; lacked integration since there was little or no heavy industry, machinery, machine tools, and chemicals industries; was heavily overweighted on the side of textiles; and was to a large extent owned by Britons.

An uncertain and faltering course of development is historically by no means exceptional. It is necessary to keep in mind that a country in the process of economic development is in a political as well as an economic transition, delicately poised between the old and the new. The history of Japan demonstrates that it is possible under these circumstances for a sovereign state just emerging from feudalism to forge—at the expense to be sure of certain political values—a well-integrated and consistent development program which embraces the whole economy and the whole society. Brazil with its long colonial tradition affords an example of what is, perhaps, more likely to happen in such a transitional phase, with state encouragement of the new in some directions being counteracted to a certain extent by the economic and political power of the old order exerting successful pressure on the state in other directions. Large landowners were able to channel most of Brazil's wealth into their own hands for conspicuous consumption and investment in real estate and prevent its

being taxed directly or indirectly via export duties to provide the funds and the foreign exchange for Brazil's economic development.

In India, unlike Brazil, the power of the old order was greatly reinforced by the fact that the British had picked the princes and landlords as the main bulwarks of British rule. As the Maharaja of Mysore, president of the All-India Landholders Conference, declared in 1938, "If we are to exist as a class, it is our duty to strengthen the hands of the Government."²⁶ So there was little possibility of their power being reduced by even what slight development on modern business lines did take place. They not only remained politically powerful, their income was immune from taxation. The Indian tax structure, as in many underdeveloped countries, was regressive, with the main burden falling on the poor. Instead of favoring business enterprise, it did just the reverse; business income was made subject to income tax in 1886 and modern business transactions have had to pay a stamp tax. The tax policy thus favored those elements in society which were parasitic and unenterprising, remote in their background, traditions, and social contacts from the small beginnings of Indian enterprise which emerged in the western part of India and which with few exceptions could not command sufficient resources for large-scale industry and long-term investment.

A sovereign India might not have done exactly what Japan did to promote economic development. But a sovereign India would probably have taken many measures in response to local pressures, especially the easy and more obvious things such as tariffs, government purchasing policies favoring home industries, subsidy to industries essential to defense such as the steel and munitions industries, encouragement and experimentation in new devices for raising the funds for building a heavy industry, the development of a national merchant marine by means of subsidy and preference. None of these things was done in India, the primary reason being that India was not a sovereign state and India's rulers viewed with distrust the prospect of India's becoming an industrial nation.

POLITICAL TRANSITION AND ECONOMIC STALEMATE

In response to the rising nationalist movement and the pressure exerted by the small but growing Indian business community in western India, the British reluctantly accorded to British India a small degree of political and economic autonomy after World War I, when the crisis in shipping had demonstrated how totally dependent Indian industry was on foreign sources of supply for even the simplest spare parts for the railways and textile industries. The 1919 political reforms delegated certain powers and a limited amount of self-government to the provinces, the British-appointed executive government at the center still controlling the essence

²⁶ Quoted in S. G. Madiman, Ph.D. thesis, University of Wisconsin, "Need for Institutional Changes and Regional Planning for Optimal Development of the Agricultural Resources of India" (1949), p. 33.

of power—the military, the police, foreign affairs, and most government expenditures.

The main shifts in economic policy were as follows. The government of India in India, and not the Secretary of State for India in London, could determine tariff policy. After the war tariff protection was allowed in the event an industry could demonstrate that this would enable it to expand to the point where eventually it would no longer need protection. Government purchasing procedures were reorganized to allow potential Indian suppliers equal competition with suppliers in Great Britain, the government of India even agreeing to buy a certain percentage of its steel supplies from the Indian steel industry. And the government accepted the recommendations of the Industrial Commission to set up an Imperial Department of Industries at the Center and provincial departments in each province with powers to promote technical education and encourage industries in a number of ways including government guarantee of capital.

Certain industries did expand in response to these developments, but in most cases the expansion did little more than replace imports with home manufacture rather than generate any new economic momentum capable of increasing total consumption of either consumers' goods or producers' goods. Innumerable factors, rather than any one overriding determinant, contributed to the lack of economic dynamism. Throughout this period the uncertainties and animosities of the process of political transition aggravated Indian skepticism as to British intentions.

Since the political transition took the form of granting autonomy at the provincial level, Indian leaders were eager to have important functions transferred to the provinces. Almost all the so-called nation-building activities were so transferred: agricultural development, encouragement of industry, education, roads, and the like. In the fiscal allocation between the Center and the services, the provinces were assigned inadequate and non-expanding sources of revenue with which to carry out these development functions. Furthermore, this devolution of authority by the Center in the vital field of development meant that co-ordination and integrated planning of development would be impossible. The fate of the Industrial Commission's proposals was described by D. H. Buchanan, writing in 1934:

Unfortunately, the central organization has not yet been set up and with the constitutional reforms of 1919 the provincial organization was made, along with education, one of the "transferred" subjects, and thus put in the hands of local governments responsible to elected legislatures. Unfortunately also, since the funds available have been wholly inadequate, no very important policies could be initiated. Furthermore, the encouragement of industry requires a far-reaching unified government policy concerning not only raw materials and methods of production but markets as well. In fact, it must be associated with educational policy and almost

every other great national interest. It is doubtful whether the mere provincial offices set up in India will have any considerable effect.²⁷

The new economic policy was a case of too little and too late. Let us take up first the question of timing. The shift came after India's major rail lines had been constructed and irrigation works built. This meant that the new policy coincided with a general tapering off of the expansive forces of public works construction and that there was less specific demand for the products of such industries as steel. Also, the British were no longer pouring capital abroad and into India at the rate they had during the immediate prewar period; so this expansive force was absent. New British capital coming to India in the twenties and thirties was considerably less than the current drain out of India of interest and profits on past British investment.

The enormous inflation of the war years left Indian industry with a difficult transition to make, which was rendered even more difficult by the overvaluing of the pound in relation to world currencies and the overvaluing of the rupee in relation to the pound. Bank deposits, registry of joint stock companies and their paid-up capital, as well as other indices, indicate economic stagnation during the twenties. Then in the thirties, though industry revived (with Indians playing a more important role than before the war), the agricultural depression hit India very hard, and for the first time the value of foreign trade, and perhaps even the volume, actually declined. The newly expanded industries—sugar, steel, cement, and textiles—relieved the pressure on India's foreign-exchange resources somewhat by replacing imports with home-manufactured goods, but not sufficiently to compensate for the deterioration in her export position which resulted not only from the world depression but also from the stagnant character of Indian agriculture and the need of India's increasing population to consume a greater proportion of her agricultural production. In consequence India, which was not granted a debt moratorium, suffered considerable strain in meeting her external commitments. India's textile industry grew somewhat under the impetus of tariff protection but it was, especially in Bombay, a sick industry suffering many of the infirmities of old age and requiring, as the Tariff Commission proposed, financial reorganization and industrial rationalization; the scheme foundered on the industry's inability to raise the necessary capital.

The shift in economic policy was tentative and piecemeal. Tariff protection could be granted only to existing industries; there was no provision for starting such needed new industries as chemicals and machine tools. There was no provision for mobilizing the capital needed for the expansion of industry—no move to encourage all-purpose banks as in

²⁷ D. H. Buchanan, *Development of Capitalist Enterprise in India* (Cambridge, Mass., 1934), p. 463.

Germany, no special government-sponsored finance institutions as in Japan, and no use of the government's taxing power to raise the capital for heavy industry as in Russia before 1905. British officials were wedded to the British tradition of government passivity in this field, and they also considered that commercial banking should be kept distinct from the business of raising industry's long-term needs. As in Britain, the security markets were to provide the link between entrepreneurs and sources of capital. India's money and security markets bore little resemblance to the British and could not adequately perform this function.

Perhaps an even greater deterrent to industrial development than the absence of adequate provision for long-term industrial finance was the more general lack of "orthodox" banking, with a central bank integrating a vigorous and extensive commercial banking network capable of providing industry's short-term capital needs and able to expand and co-ordinate the country's money supply. For a long time modern banking in India had been the exclusive preserve of British banks: (1) the exchange banks, registered abroad, which financed export and import trade, and (2) the Presidency banks, registered in India and engaged in more general banking activity. The Presidency banks retained their separate identities for more than sixty years after the presidencies themselves were amalgamated into British India. They were consolidated into the Imperial Bank in 1920, not on the instance of the government of India but on their own initiative, oddly enough, through fear of being engulfed by the exchange banks operating out of London. The exchange banks had been sufficiently powerful to prevent the Presidency banks from engaging in any foreign exchange transactions, as they were later able to exclude the Imperial Bank from this field.

The Imperial Bank, though it had some central banking functions, could not control the money market. This followed in part from the fact that it was a private bank in competition with ordinary banks; it was in part because of the bank's limited powers—it had no power of note issue; it was in part because indigenous banking on the one hand and the foreign-exchange banks on the other were outside its purview—indigenous banks because they were really moneylenders rather than creators of credit, and the exchange banks because they were registered abroad and could go to the London money market. Indian joint-stock banks, wedged in between the indigenous banks and the exchange banks, suffered from this lack of banking integration. It was not until 1935, when the Reserve Bank of India was finally set up, that India had a central bank. (The Bank of England, which played a vital role in strengthening the British economy and developing the British money market by its management of the public debt and the coordination of the banking system, had been chartered by the government in 1694.)

For some time India had been a museum of miscellaneous British institutions and practices. Central banking, as we have seen, came very

late. And when it was finally introduced it was set up on the British model and was in no way designed to meet the particular needs of the Indian situation. Western-style labor legislation came much earlier in response to the British administrator's own conscience—and pressure from Lancashire. (In this instance Indian business and British business in India stood shoulder to shoulder, to no avail.) British company law was also introduced early into India, but followed closely English company law and until 1936 conveniently ignored the managing-agency system which created a different situation from that in England and called for a wholly different treatment. (Indian companies have been not autonomous units but have been operated under a contractual agreement with a managing agency.) Income-tax legislation, moreover, proved ineffective for a long time since it was based on individual income whereas in India most income is held by the joint family. It is partly this fact—that a wide variety of miscellaneous institutions were transplanted somewhat helter-skelter, without reference either to the needs of economic development or the peculiarities of the Indian scene—which accounts for the impression one receives in studying India of a lack of organic relatedness between the whole and the parts. India had the outer form of many British institutions but not the inner core, the shadow but not the substance.

In the difficult years after World War I many restraints operated to prevent the British from forging a bold new program for India. Britain was very much preoccupied at home fighting a losing economic battle with Germany, Japan, and the United States. Britons in the Indian civil service, often men of outstanding ability and high moral purpose, came largely from a governing class which, like India's own Brahmins, had a certain contempt for business and trade. They were gentlemen, unrelated to either the mainstream of modern technology or the new urgency toward economic expansion and development whether by private or public enterprise. They were specialists in judicial procedures and government administration, not economic promoters or organizers. Furthermore, they were imbued with orthodox economic thinking, which had evolved with British experience and for so long had expressed British interest. Britain's history as the pioneer country to emerge from commercial capitalism to industrialism offered few guideposts for the essentially different job of precipitating industrial development in a country economically far behind the West and possessing widely different cultural traditions. One very basic contradiction in which the best British administrators found themselves caught up was the discrepancy between their belief in their own cultural tradition of political democracy and representative government and their job of running an autocratic government in India responsible not to Indians but to a foreign power.

Above all, British administrators were paralyzed for really effective action in any direction by being caught in the middle between so many conflicting currents: British pressure groups both in India and in Britain,

Indian pressure groups such as the landlords and the princes made strong by British policy over the years and standing squarely in the path of agrarian reform and political democracy, and the rising nationalist movement in India, with India's new business classes clamoring for state aid to promote rapid industrialization while Gandhi preached a return to village self-sufficiency and the hand loom.

On the issue of Imperial Preference, India's British administrators found themselves caught between pressures originating in Britain and Indian sentiment. Ever since 1903 Imperial Preference had been resisted by the British administration of India partly on the grounds that it would not help India and partly on the grounds that it would make more insistent the Indian industrialists' demand for protection. With the change in tariff policy after the war came the imposition of Imperial Preference, designed to tie Britain closer to the British dominions and British colonies. In the Indian case this meant having Britain buy more raw materials in return for British manufactured goods—in short the same old colonial economy relationship which Indian industrialists and nationalists had so long opposed. Indians in the Legislative Assembly voted down the Imperial Preference agreements in 1936 and 1939 but were overruled each time by the government of India.

In the conflict between Indian business interests and British business interests in India the government of India usually supported the British. What little Indian enterprise did emerge in response to British administration and economic policies felt cramped by British enterprise in India which, with its easier access to Western technology, to the financial resources of foreign banks, and above all to the British-administered government of India, had acquired a dominant position in plantation crops, coal, transport, and jute. Indian enterprise tended to have the psychology of a minority business group engaged in trade and speculation rather than in long-term investment and possessing a secure footing in only one modern industry, cotton textiles, itself a rather insecure industry. Indian business came increasingly to advocate state intervention not only to accelerate economic development via tariffs and the like but to protect Indian enterprise from British enterprise. One sees the paradox of the British business group in India, despite its close ties to the British administration, wanting the maximum of private enterprise and the minimum of government interference, whereas Indian business, though fundamentally distrustful of the British administration, wanted more government participation and responsibility for Indian economic development in the field of banking, railway administration, and the promotion of industry, feeling that it was easier to bring pressure on the British administration of India than on private British interests. After most of India's railways became government-owned, for example, the British administration farmed out the actual operation of about one half of these railways to private British companies. Indian business wanted these railroads government-operated. During

the long struggle preceding the setting up of the Reserve Bank of India, British business wanted the bank to be private, Indian businessmen and the Indian legislature wanted the bank responsible to government. Indian business fought and lost these battles.

In the 1935 constitution which Parliament enacted for India (Government of India Act 1935, the federal provisions of which were never put into operation), the British made elaborate provision for safeguarding the British companies from any possible discriminatory action by any future independent Indian legislature. These provisions were attacked by Indian business on the ground that *de jure* equality spelled *de facto* inequality when it was a case of a giant confronting a dwarf. How could an Indian merchant marine for instance ever be built up in the face of the preponderant position of British shipping firms, with their monopoly rebate system to keep shippers in line, unless the government specifically favored an Indian merchant marine?

The 1935 federation proposals also reveal Britain's continuing solicitude for India's princes. These proposals had they been accepted would have installed the princes, still autocrats in their own domains, as integral parts of the newly federated India with voting power in the new organs of government out of all proportion to the numbers of their voteless subjects, able in effect to hold the balance of power between Hindus and Moslems. India's princes opposed even these proposals, apparently confident that they could strike a still better bargain. British rule thus seemed to have hardened vested interests. In agriculture also, though efforts were made to improve cultivation techniques by the setting up of the Imperial Council of Agricultural Research in 1929, agrarian relationships and land ownership remained intact.

BRITISH-INDIAN FINANCE

Any effective program for furthering India's economic development would have required fundamental changes in fiscal policy. Fiscal policy in India during the period 1920-40 did not, however, undergo any dramatic changes. No serious effort was made to increase total revenue or to divert more of it to nation-building activities. In money terms total revenue, central and provincial, remained remarkably constant: 2,060 million rupees in 1920, 2,070 million rupees in 1930, and 2,050 million rupees in 1940.

Even if the British had wanted to use the power of the state for industrial development, it would have been very difficult, because many Indians, though they had come to believe in the necessity for state support for industrial development, had become so distrustful of the British state that they resisted attempts to increase revenue. As K. T. Shah pointed out:

The Indian Government of today labours under a special disadvantage arising from the natural distrust with which it is viewed

by nationalist India. No community can progress or improve its economic position, without extending the scope of collective activity, and therefore unavoidably the amount of public expenditure. But any proposals of the Government of India in the direction of additional expenditure are bound to be looked upon with suspicion, since the lay-out of the existing public expenditure in India is certainly not in the benefit of India exclusively, or even principally.²⁸

Three items consumed most of India's revenue: interest on public debt, defense, and current administration. British administrators may have been well-nigh incorruptible but they were expensive, the British salary scale being far out of line with the income of the people who had to pay the bill. Indians carried on a perpetual struggle, ultimately with some success, to get more government jobs opened to Indians.

The total defense burden was high. Besides having to pay the costs of past wars (included in interest charges on the unproductive debt), India had a current bill for military expenses which was by far the largest single item (other than interest) in the Indian budget. The Indian defense establishment had three functions: (1) to defend India from invasion from without; (2) to defend the British from possible rebellion in India; and (3) to maintain British power in the Orient. The Indian army was used outside India on nineteen occasions between 1838 and 1920. In the eyes of many Indians this enormous "defense" burden amounted to their paying the bill for their own subjugation. As Ramsay MacDonald wrote in *Government of India*: "A large part of the Army in India—certainly one-half—is an Imperial Army, which we require for purposes other than purely Indian; and its cost, therefore, should be met from the imperial and not Indian funds." Elsewhere he observes: "If the Empire would readjust the burdens which it imposes upon Indian Finance . . . the Indian Government could inaugurate great reforms which would increase Indian wealth."²⁹

The following selected figures from the combined central and provincial expenditures in the Indian Budget of 1935/36, as analyzed by Z. A. Ahmad,³⁰ give some idea of the relative magnitudes involved:

Military services	500 million rupees
Interest on productive debt paid out of the profits of commercial departments	450 million rupees
Interest on unproductive debt	126 million rupees
Avoidance of debt—i.e., Debt retirement	43 million rupees
Administration of justice, jails, and police	203 million rupees

²⁸ K. T. Shah, *Wealth and Taxable Capacity of India* (Westminster, 1924),

p. 313.

²⁹ Quoted in K. T. Shah, *op. cit.*, p. 313.

³⁰ Z. A. Ahmad, *Congress Political and Economic Studies No. 8*, "Public Revenue and Expenditure in India" (1938), pp. 44-45.

These sums may be contrasted with the small amounts spent by the Indian government on so-called nation-building activities:

Agriculture	27 million rupees
Industry	9 million rupees
Scientific departments	7 million rupees
Medical and public health	55 million rupees
Education—mostly at the secondary and college level	122 million rupees

The total spent on all these nation-building activities came to less than 10 per cent of the budget.

As we have seen, a large slice of current revenue went to pay interest on public debt, productive and unproductive. According to D. L. Dubey India's total public debt March 31, 1930, and its composition were as follows:

	million rupees
1. Debt of the Government of India	11,382
Advanced to railways	7,319 million rupees
Advanced to other commercial depts.	230 million rupees
*Advanced to provinces	1,423 million rupees
Advanced to states and other bodies	176 million rupees
Uncovered interest-bearing obligations	1,765 million rupees
Cash, bullion, and securities held on Treasury account	468 million rupees
2. Direct loans raised by the Provinces	164
3. Net Debt of larger local bodies (Improvement Trusts and Port Trusts) after deductions of advances from the Government, sinking fund investments, and unspent balances of loans	680
Total Public Debt of India	12,226 (£916 million)

* Chief provincial assets behind these liabilities were irrigation works carried on the books at 1,079 million rupees.

Source: *The Indian Public Debt* (1930), pp. 10, 215, 216.

Much of India's public debt was in essence an accounting device for placing on India—despite the protests of many British officials in India—British military and imperial expenses unrelated to Indian needs. According to an estimate made for the All-Indian National Congress in 1938

by A. Z. Ahmad, the nonproductive debt amounted to 112.2 million pounds in 1858, and had increased by 1938 by 6,260 million rupees or £473 million. These sums, though rather insignificant in relation to Britain's total economy and national budget, loomed large in relation to India's limited revenue sources and development. Strenuous efforts were made to retire this unproductive debt, the "avoidance of debt" item in the budget sometimes absorbing as much as 60 million rupees out of current revenue. Each war or military expedition piled up a new unproductive debt which was then brought down considerably by resolute debt reduction before the next onslaught. Debt reduction, no doubt necessary if the debt is unproductive, has a deflationary effect.

We have already mentioned the important role which the assets represented by the productive debt played in Indian economic development. Undivided India had 42,000 miles of first-line railway tracks and 48,000,000 acres under irrigation (this includes public and private irrigation works). The cost of India's railways was excessive as a result of several factors, among which the original guaranteed rate of interest figured importantly. Later the guarantee was lowered from 5 per cent to $3\frac{1}{2}$ per cent. Some of the lines were primarily of military importance, and these were inevitably a drain on the state. After 1914 railway development lagged behind the demand for its services, and there was a chronic shortage of cars. The government irrigation works included some unprofitable projects, which were carried by the profitable ones, some of which earned as much as 20 per cent on their investment. The over-all return from state irrigation works projects was high even during the depression; in 1932/33 it was 5.35 per cent on the capital invested in government irrigation works. When the depression came in the thirties the Indian government instead of expanding public works projects to maintain purchasing power and employment followed the orthodox course of retrenchment.

We have seen that India under British rule "enjoyed"—or suffered—orthodox finance. Mr. Chandler Morse in commenting on my paper raised the question of the potentialities of unorthodox finance for Indian development: deficit financing of public works with the government relying on the powers of a central bank and the tax mechanism to keep the economy under control and damp down the inevitable inflationary pressures. Such a policy would have required not only the setting up of an effective central bank but an entirely different orientation of thought among British administrators and of the economy they administered, a focus on India as an entity rather than on India as a subordinate part of a larger entity, i.e., the British Empire. Unorthodox finance implies concentration on a country's internal development requirements—even to the detriment of the exchange value of the country's currency, if need be—rather than on the country's external financial commitments.

This emphasis runs counter to a basic element in British colonialism in India, namely, the pressure for the bills which India had to pay in sterling to rise, a pressure due to the increase in employment of Britons in the Indian Civil Service and military establishment together with the increase in Indian public debt floated abroad. These so-called "home" charges (which meant "home" for Great Britain and "foreign" for India) included interest on India's sterling public debt and the direct costs of the British administration which had to be paid in sterling such as pensions and furlough allotments; these rose from 5 million pounds in 1860 to 29 million pounds in 1934, when the major components were as follows:

- 8.6 million pounds—interest on railway debt
- 6.1 million pounds—interest on other debt
- 1.6 million pounds—civil administration
- 2.6 million pounds—pensions and allowances
- 8.1 million pounds—defense services.³¹

According to the prevailing British view India got value received and more. As Sir Theodore Morrison, a member of the India Council, declared in *The Economic Transition in India*:

When viewed in this way I do not believe it is possible to resist the conclusion that India derives a pecuniary advantage from her connection with the British Empire. The answer, then, which I give to the question "What economic equivalent does India get for foreign payments" is this:—India gets the equipment of modern industry, and she gets an administration favourable to economic evolution cheaper than she could provide herself.³²

According to the Indian view, Indians had no control over this growth of foreign payments. Furthermore, these payments of pensions and furloughs to Britons who had served in India symbolized India's colonial servitude and the fact that Britons held the key positions, the power, and the accompanying income—from Indian pockets—that were withheld from the Indians themselves.

Until the 1930's India had a growing favorable trade balance in goods (commodities and bullion) but the excess of exports over imports was not large enough to meet her ever-mounting sterling commitments, which included, along with the home charges, shipping charges, banking and insurance commissions, and private remittances to Great Britain. Thus India went steadily into sterling debt, thereby exacerbating her problem in future years as the interest payments rose on debt held abroad. These sterling commitments seemed constantly to outstrip India's capacity to meet

³¹ G. B. Jathar and S. G. Beri, *Indian Economics* (5th revised ed.; Bombay, 1939), II, 271.

³² Quoted in Lajpat Rai, *op. cit.*, p. 85.

them and put a severe strain on the British administrators trying to organize Indian finance to yield the necessary amounts.

For seventy years before the end of British rule, India's British civil servants were preoccupied with the pressing problem of achieving a stable or, better still, rising value of India's currency in order to reduce the cost in rupees of meeting the sterling commitments. Many famous commissions and committees were set up to wrestle with the problem. But the fundamental question of co-ordinating and expanding India's money supply for her own needs did not become official business until the Central Banking Enquiry Committee was finally set up in 1929 in concession to the great popular demand.

When the gold standard was resumed after World War I the question arose as to the gold value or rather the sterling equivalent value of the rupee. The prewar value had been 1s. 4d. In 1927 the rupee was stabilized at 1s. 6d. The higher valuation had certain definite and immediate advantages for the British civil servant. Since fewer rupees would be necessary to meet the sterling commitments, there would be less strain on the Indian budget. And the civil servant about to retire to England would be able to buy more pounds with his pension. In general, the higher valuation facilitated imports, most of which were from the British Isles, and burdened Indian exports. Here one might expect a conflict of interest between Britons wanting to import British goods into India and Britons doing business in India. But apparently there was none. One must remember that the typical British managing-agency firm in India had a wide variety of business interests including exclusive sales agencies for British firms. Many Britons in India, more interested in the enhanced value of a limited number of rupees when converted into sterling than in the expansive effect which the lower rate might have had on their Indian business, wanted the higher rate. By this time Britain was living off her hump; in India as elsewhere the British were no longer reinvesting profits made overseas but were repatriating them to Britain. Indian business on the contrary fought the currency settlement because of its deflationary effect.

The point has often been made that India, being a colony, was able to borrow cheaper in the London money market than would otherwise have been the case, and this is true. India also got with the colonial relationship a pressure to float loans in London and a lack of pressure to develop an Indian bond market, since India offered outstanding advantages for Great Britain as a field for British portfolio investment. Most of the money raised in Britain was spent in Britain on British-made railway equipment; with the British in command there was no danger of India repudiating her debts; India kept large reserves on balance in London as a pledge for the discharge of her sterling obligations. India's "drain" was Britain's "surplus." There was no serious attempt to raise India's public capital needs in India itself until World War I, when Britain no

longer had a plethora of funds seeking investment abroad. Then it was discovered that India could borrow as cheaply in India as in Great Britain. After World War I, the proportion of debt held in sterling diminished though the absolute amount increased from £177 million in 1913 to £385 million in 1930.³³ Even after the war India sometimes offered better terms to the holders of sterling debt than to those holding rupee debt with the consequence that India's princes on occasion bought sterling issues rather than rupee issues.

India's bullion imports provide another significant index of the lack of organization of India's financial resources for development. All during the twenties India imported sizable amounts of gold, gold imports reaching an all time high of 73 crores of rupees in 1924/25. To be sure, this same gold was exported in bad years to balance the accounts. But had the funds been used during the good years to buy the equipment needed for industrial and agricultural development, or even to buy India's public debt so that her foreign exchange commitments could be scaled down, India would have been better able to stand the strain of the bad years. Gold imports reflect the fact that much of India's income was held in non-enterprising hands and that nothing effective was done to mobilize this flow into the purchase of government rupee debt or direct productive enterprise. The net increment of bullion imports for the fourteen years 1914-28 was 5,651 million rupees, or over 80 per cent of the estimated reproduction value of the plant and equipment in India's modern industrial sector, 6,748 million rupees in 1938/39, according to H. M. Trivedi and M. V. Divatia.

The question was raised at the conference why countries like Brazil with extensive foreign-exchange resources have not mobilized them more effectively for development. The answer in the Indian case—aside from those aspects of India's balance of payments which we have already discussed, the home charges and bullion imports—is in part due to the continuing pressure in Great Britain to sell India finished manufactured goods. Even in the late thirties textile imports was the largest single item (18 per cent of total imports in 1936/37). British industry was still pressing as best it could right up to the end of British rule to prevent Indian industrial development in order to retain markets for British enterprise. Guy Laycock, British Board of Trade representative, was given the task of appraising future effects on British industry of what war production was permitted in India during World War II. According to the newspaper accounts of his report, "Mr. Laycock holds the view that no steps have been taken to expand production as a result of the Mission's visit which are not essential for war purposes and that on the whole post-

³³ A substantial part of the increase in the public debt was incurred to buy out the privately owned railways.

war interests in India of British industry are not likely to suffer so greatly as was at one time expected."³⁴

But time was running out for the British, and colonial India was about to achieve her independence. With the virtue of hindsight we can see that Britain too would have had a great deal to gain from a new formulation of British-Indian economic and political relations and a deliberate, organized effort to achieve economic expansion in both Britain and India. It is one thing to see this in retrospect, quite another to act in advance.

The Indians are now the heirs of their own country. They have inherited an economic, social, political, and administrative structure which was built for other ends than economic development. They face the gigantic task of transforming this whole structure to meet their own needs, discarding the useless and harmful British institutions, practices, policies, and attitudes while retaining those which can be helpful and integrating them more fully into the Indian way of life.

³⁴ Quoted in Sir M. Visvesvaraya, *Reconstruction in Post-War India* (Bombay, 1944), p. 15.

Contrasting Factors in the Modernization of China and Japan

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INTRODUCTION

WHEREAS INDUSTRIALIZATION made little progress in China, it proceeded rapidly in Japan in the late nineteenth and the present century. To account for this difference, five hypotheses are advanced:

1. It was not differences in the new forces introduced to China and Japan that accounted for their different experiences in industrialization. It was rather differences in the social structures into which those new forces were introduced.

2. Differences in "nonsocial" factors such as raw material resources, etc., do not account for the differences. In so far as they are relevant they would indicate either an outcome opposite to that which occurred or no special difference in outcome.

3. One strategic factor in Japan's industrialization was the fact that the basis from which change took place in Japan was such that the transition did not undercut the system of control over deviance or the possibility of highly controlled direction of the members of the society, as was the case in China.

4. There existed in Japan a group of individuals relatively easily converted, particularly to the planning and administrative roles required by the conversion.

5. There existed in Japan a possibility of eliminating without internal breakdown the influence of those individuals not relatively well adapted to make the changes required by the conversion.

The material on which these hypotheses rest consists of findings presented in earlier studies relating to China¹ and of inferences drawn concerning factors present in Japan and their implications in terms of the

¹ *The Family Revolution in Modern China* (Cambridge, Mass., 1949); *Some Problems of Modernization in China* (New York, 1949); and Shih Kuo-Heng and Marion J. Levy, Jr., *The Rise of the Modern Chinese Business Class* (New York, 1949), Part I.

Japanese social structure. Limitations of space have prevented elaboration either of the concepts employed or of the interrelationships found.

ABSTRACT

Statement of the Problem

This paper is concerned with strategic, necessary, but not sufficient conditions for Japan's apparent success in relatively rapid and peaceful conversion from a markedly nonindustrialized to a relatively highly industrialized society in so far as those conditions are to be found in the social structure of Japan and the new forces brought to bear on Japan.

Method

The method used has been that of a comparative presentation of the cases of China and Japan. This has been done because I have felt that the presentation of those features of China that were similar to those of Japan or offered China perhaps even greater advantages in the process would highlight and clarify those factors strategic in the case of Japan. The material presented in both cases has been deliberately oversimplified, particularly in the case of Japan. This has been done because space does not permit extended and carefully qualified elaboration of the interrelationships found, or of concepts developed for the analysis of the available materials.

The Stages of the Analysis

Any problem of social change is a problem in comparative social analysis. Three stages of a social system must be distinguished either explicitly or implicitly: (1) that from which change takes place, *the initial stage*; (2) that during which the change takes place, *the transitional stage*; (3) that of the system when the change under study may be considered complete, *the resultant stage*.² In the case of both China and Japan the initial stage is one of relatively little industrialization. For present purposes a system will be considered more or less industrialized to the extent that its system of allocation of goods and services (including in that allocation both consumption and production) involves tools that multiply or magnify the effect of the human energy offered and to the extent that inanimate sources of power are being utilized.³ Elements of industrialization thus defined are encountered in the initial stages of both China and Japan as those stages are distinguished here—and probably in any society. But these elements are unimportant by comparison with those involved in "modern Western" nations such as the United States, Great Britain,

² See M. J. Levy, Jr., *The Structure of Society* (Princeton, 1952), pp. 44-45, 71-76 (especially these pages), 83-88, 140-144, and 147-148 for a discussion of problems involved in the analysis of social change. (The treatment here is based on that discussion.)

³ See the items cited as "industrial society" and "industrialization" in the index of *The Structure of Society* for a discussion of this concept and some of its general implications, etc.

and Germany, or Japan of the 1930's. It is in this sense that the initial stages of China and Japan distinguished here are spoken of as nonindustrialized or relatively little industrialized.

The period of Chinese society that will be considered its initial stage is that period of the Ch'ing Dynasty in the middle and latter part of the eighteenth century. The period of Japanese society that will be considered its initial stage is that of the reign of the Shogun Iyemitsu (1623-51). These stages will be referred to respectively as "traditional" China and "traditional" Japan. In both cases there are, no doubt, many elements of social structure for which an authentic pedigree can be traced further back in the history of the societies concerned. Here, however, we are concerned with the character of the initial stages and not with their origins.

These two particular stages have been chosen in order to accent two sources of change in the societies. The first has to do with sources that were indigenous to the societies concerned. The second has to do with the sources of change that came from social systems outside the two societies considered. The internal sources of change were markedly different, but the external sources of change as treated here were identical. In China the internal sources had to do with the breakdown of the Imperial bureaucracy. This was a breakdown of a sort that had been seen in many of its facets in the history of previous Chinese dynasties. In Japan the internal sources of change had to do with the breakdown of a feudal⁴ social system—a breakdown in which a major role was played by the changing actual role of the merchants in the society. In both China and Japan the external sources were virtually identical. They were the factors involved in modern industrialization. Neither China nor Japan was responsible for the development of the highly industrialized social systems that provided the factors that were the external sources of change. If the changes described as internal sources are in fact internal sources of change, then it follows that these internal sources are themselves products of the operation of the systems that have been referred to as the initial stages of the societies concerned. This in turn argues that whatever differences we may find between China and Japan with respect to their resultant stages must be primarily a result of their differences in their initial stages. This would follow in so far as it is in fact true that their external sources of change were identical and their internal sources of change were different.

⁴ The term *feudal* is here applied to social systems with the following characteristics: (a) closed social classes, (b) a well-defined hierarchy of power-holders, (c) identification, at least ideally speaking, of each individual as responsible to some particular individual higher than himself in the hierarchy and related to others outside of that direct line by virtue of his overlord's relations to them, and (d) a distribution of goods and services, most especially land ownership and control, primarily on the basis of the ranks distinguished in the hierarchy of power and responsibility.

THE PROBLEM OF CHANGE IN CHINA

The Initial Stage

Perhaps the most significant feature of "traditional" China for present purposes is the fact that it was "family oriented" to an overwhelming degree.⁶ Ideally speaking, it was expected that decisions be made primarily with reference to family interests. The individual owed loyalty first, last, and always to his family. This was true even in a conflict between one's family and the Imperial bureaucracy. The whole Confucian theory of order rested in considerable part on the theory that if family members were so well imbued with filial piety that they would never consider disloyalty to one another, the individual members could not possibly be the sort of people who would as individuals commit improper acts.

There were several organizations that brought pressure to bear on family groups and limited the extremes to which the individual might go in sacrificing the interests of others to the interests of his family. Especially noteworthy in these respects were such organizations as the neighborhood councils and the guilds. But even in these the pressure was often brought in family terms. The individual was constrained in effect by the threat that he would achieve only the short-run interest of his family and that in the long run his acts would so unite other families against his as to bring about its downfall. In such organizations families were represented by family heads, and pressure on individuals was usually brought to bear through the family head rather than directly.

The family in "traditional" China was not only the overriding focus for individual loyalties in the ideal case. It was also the basic unit in terms of which the economic aspects of life were carried out. The average Chinese family, and that means the ordinary peasant family in "traditional" China, was self-sufficient in both production and consumption to a degree that it is difficult for persons from highly industrialized societies to understand. Departures from this pattern in either direction were considered unfortunate. Even in gentry families in which such self-sufficiency was in fact much lower, the dependency on nonfamily members as producers was minimized, at least ostensibly, by the use of servants who were often quasi-family members and by cutting to a minimum the number of family members through whom these outside contacts were made.

Finally, the family was the basic unit in terms of which the allocation of power and responsibility took place. The individual was controlled primarily through pressure brought to bear on him by the family head. The hierarchy of power and responsibility with which he was most familiar was that of his own family. When he participated in groups outside his family group, these were likely to be organized on a pseudo-family basis,

⁶ Only the sketchiest outline of points about "traditional" China will be given here. Greater elaboration of the points stressed here may be found in the sources cited in n. 1, above.

or he was likely to be controlled, in so far as he was controlled, on the basis of the implications of his deviance for the fortunes of his family.

There were, of course, organizations of considerable importance for Chinese society apart from the family organization. These often required decisions that were not in accordance with those that might have been made by unbridled family self-interest. Most notable among these was perhaps the Imperial bureaucracy. "Traditional" Chinese society was dependent in many respects upon some highly organized administrative machinery. This dependence was particularly marked with regard to problems centering about irrigation, but in most of the dynasties, whatever were the reasons, the production of certain strategic goods and services (e.g., certain metals, salt, communications, etc.) were also handled on this basis. The equipment and organization involved required considerable talent to devise, but they were also subject to extremely low rates of obsolescence, and apparently also to relatively slow rates of decay. This is true at least by comparison with the situation in a highly industrialized system in which the attention to equipment and organization must be unrelenting in a sense and to a degree unnecessary in the Chinese case.

When the bureaucracy was working as it was "supposed to," individual family interests were rigidly ruled out. Nepotism in recruitment was banished by a most carefully worked-out examination system. During one's service in the organization every attempt was made to remove temptation for putting one's family interests above one's duties to the state. But no attempt was made to teach the members that such family interferences were bad. It was the responsibility of the system to insulate the individual from such pressures by properly conducted examinations, by refusing permission to serve in one's home area, and the like. The attempts to insulate the individual broke down in many cases through the years. The dynastic cycle in China for some two thousand years saw a continual breakdown and renovation of the Imperial bureaucracy. Any attempt at conversion as opposed to insulation would probably have been extremely difficult. It would have involved a radical departure from the tenets held good and true throughout the rest of the society and would have undercut many of the other aspects of the bureaucracy itself. As it existed, the Imperial bureaucracy did not ideally speaking provide an organization that took precedence over the family. The underlying theory of government was that a proper government could not be unjust to any family, that no filial son could have reason therefore for not obeying the government. A good family man could not be other than a good citizen.

Friendship groups of various kinds and degrees tempered family relationships, but here again in case of clear contradiction between the interests of one's family and one's friends, the family interests, at least ideally speaking, took precedence. The overwhelming significance of the family as a center of attention in the society was demonstrated in other ways than this matter of precedence, however. In groups outside the

family the terminology of kinship was likely to be applied, particularly if the relationships involved were considered to be extremely close and binding. Thus close friends were likely to be referred to as "older brother," teachers assumed a role likened to that of "father" or "father's elder brother" relative to their students. Thus quite apart from the precedence taken by the family in case of conflicts, in the ordinary course of those relationships outside the family, family solidarities were continually being called to mind, simulated, and reinforced.

Organizations like the neighborhood ruling councils, the guilds, etc. have already been mentioned above. They often operated in such a way as to limit the pursuit of family self-interest, but as has been pointed out above, they operated frequently through the use of family pressures. The strong emphasis on continued family residence in a single locale enhanced this possibility in the case of the neighborhood groups, and the tendency of apprenticeships, particularly in the more lucrative fields dominated by the guilds, to be given on highly nepotistic bases enhanced this possibility in that field. The use of the family as the vehicle of governmental control as exemplified in the *pao-chia* system is too obvious to require further mention. But in these respects again the family priority was made clear in other ways. Here too there was the transfer of kinship terms to non-kinship relations. But the matter was highlighted by what happened when the patterns in these areas did not work out as they would have under conditions generally considered ideal in that society. When, for example, a given family in a neighborhood became so powerful that pressure could not be exerted on it successfully by the threat of its long-run disadvantage, family self-interest did take precedence over the neighborhood council, or more properly the neighborhood council came to be completely dominated by the members of that powerful family. When this happened, the interests of other families in the area were preserved only if their abrogation served no useful purpose for the family in power or if the family head of the family in power were a benevolent despot in the area and took an essentially paternal attitude toward those over whom he could in fact have exerted power.

The comparison of China and Japan in these and in other respects has often been confused by the use of the term *feudal* to denote both of these social systems. This can, of course, be done legitimately, depending on one's definition of the term. But its use in this connection has perhaps on the whole been more misleading than any other single term used in discussions of the industrialization of nonindustrialized areas. If the term is used to mean that from the point of view of the observer, the peasant had a difficult time of it in both societies, that individuals were not treated "democratically," that there was a great gulf between the "haves" and the "have nots," that most people made their livelihood from agrarian pursuits, that many of the "haves" lived on income secured by virtue of ownership of land, etc., then both cases may be described as feudal. But

the connotations of the term *feudal* include as a minimum the factors listed above⁶ as the defining elements in the term. Unless the term is redefined by the user, these connotations go along with it, and the term is not usually redefined. In the sense of the term *feudal* as defined explicitly above, "traditional" China was decidedly nonfeudal; in this sense China has not been truly feudal for the last two thousand years. In this sense Tokugawa Japan was feudal. It is the hypothesis here that the structural differences involved in this distinction are of primary importance in understanding the different experiences that these two systems have had with industrialization. If in fact the basis from which change is taking place today in China were feudal in the sense of that term as defined here and as rather generally understood, then China would present very different possibilities and probabilities of change than are in fact present.

"Traditional" China did not contain a closed class system. It is true that the paths of social mobility were frequently badly clogged, but it is doubtful that they were actually ever completely closed during the last two thousand years of Chinese history, and certainly they were never ideally closed during that time. It is true that some groups were at least in theory excluded from social mobility since their members were excluded from admission to the examinations, but the vast mass of the population was never so excluded. Ideally speaking a peasant family could always climb to the top of the tree if it could produce and educate a son of great talent.

The ideal type family in "traditional" China was the gentry type family. There was in fact mobility upwards, and there was also mobility downwards. Peasant sons did rise to the top of the bureaucracy. Wealthy gentry families not only lost their wealth and power in many instances, but they often returned to the status of peasant families or worse. In societies like those of medieval Europe and Tokugawa Japan, the expectations, both ideal and actual, of every member of those societies were that one and one's family would retain forever the class status into which one was born. However much the actual expectation may have been of a similar sort in China, the ideal expectation was not of this order. It is extremely doubtful that the actual closure of class membership in "traditional" China ever approached that of Tokugawa Japan, but even if it did, their differences in ideal patterns in these respects mark them as animals of a different species.⁷

The allocation of power and responsibility in "traditional" China was also quite different from that involved in a feudal society. There was a relatively well-defined hierarchy of power-holders, but this situation existed only in so far as each individual responded to the expected family

⁶ See n. 4, above.

⁷ There is little about which we may feel certain in the social sciences, but the importance for understanding social phenomena of the distinction between ideal and actual patterns is one of them. Systems with similar actual patterns but different ideal patterns in a given sphere cannot be without structural implications, of either a static or a dynamic sort, of these differences.

controls and the relations among different families remained in equilibrium. In time of upset, change, or crisis one owed loyalty first to one's family and only secondarily to the power-responsibility hierarchy outside the family. When new situations arose, the family head decided whether he and the other members of the family would go along with orders from outside the family or not. When the individual was not in a position to decide such a question on the basis of family interests (either because of separation from or loss of his family members), he was in a position of "individualism by default." He would under such conditions go along with the rules of magistrates or princes or whatever if he felt his interest coincided with theirs or if he felt that the force at their command was such that he had no alternative, and if not, not.

Within the family the hierarchy of power and responsibility was clear-cut ideally speaking, but the position of a given family relative to other families and to organizations other than families was subject to considerable shifts. Hence the third condition of the definition of *feudal* given above⁸ was not met. The orientation of the family head was not to someone over him in the general social hierarchy of power and responsibility, but rather was owed to the organization of which he was the head. His loyalty and submission to others outside that organization was ideally speaking primarily instrumental for the welfare of the organization that he headed. It was generally to be expected that he be ruthlessly rational in seeking to maximize that welfare. Last, but not least, if he could maximize the welfare of his own family at the expense of others in the society, the responsibility was not considered his but rather that of the sovereign.

It would be beside the point here to go into detail about the many ways in which those factors were interrelated with other aspects of the social system, or the roles they played both in adapting the system to its setting and in maladapting it to that setting. Actually under the circumstances it made for a system of control which was characterized by relatively long periods of stability and of gradual disintegration and which tended to be restored after a period of decay in a renovated rather than a revolutionized form. What is important from the present point of view is that it was a system of control that was peculiarly vulnerable to certain types of changes, that these changes, if introduced rapidly, could result in rather dramatic disintegration of control. The keystone of social structure in these respects was the family structure. For roughly two thousand years family structure does not seem to have been radically altered in these respects, and no genuine alternative was offered for it. But in the nineteenth and twentieth centuries there were forces elsewhere in the world that impinged on China and undercut the "traditional" family structure.

Turning for a moment from these problems of control, the special situation of the merchants in "traditional" China must be considered.

⁸ See n. 4, above.

Ideally speaking the merchants held roles of extremely low prestige in "traditional" China. They were ranked well below the peasants, who were, of course, ranked well below the gentry. There were even periods in which attempts were made to make a closed class of the merchants by forbidding them or their sons or grandsons from taking the Imperial examinations. For reasons that need not detain us here, these attempts were never successful in the long run. *In actuality* the merchants who were successful as merchants frequently became powerful politically and prestigious socially despite the ideal patterns of the society to the contrary. This sort of violation of the ideal patterns of a society should not seem strange to Westerners who are really quite familiar with the phenomena in the form of racketeers and the like controlling local and even state governments, amassing fortunes through corruption, escaping the punishment ideally decreed for such activities, and eventually in some cases becoming highly respected members of their communities. This again is a discrepancy between ideal and actual patterns which is of great importance for understanding the social phenomena of modern Chinese history.

It is probably true that the merchants in "traditional" China tended to be rather more emancipated from the traditional features of their social environment than were Chinese in the roles of gentry, peasants, artisans, etc. This is probably one of the reasons that attempts were made to restrict their power and influence. By and large the merchants made their fortunes by trading rather than production. As such, unlike the other members of the society, the self-sufficiency of their families was minimal. Frequently they produced neither what they sold nor what they consumed. Their contacts with persons outside their own family groups were therefore broader than those of most of the members of their society. They saw more of China and of other lands, as well as of people drawn from wider backgrounds. One would expect that these people with their greater perspective, their commercialism, and the like would have been the ideal people to break new ground when industrial influences were first felt, that they would convert easily to the roles played by members of the "middle class" in modern Western societies such as England and the United States. But this does not turn out to have been the case, and at least some of the explanation of this would seem to lie in factors already mentioned above.

Often when there are discrepancies between the ideal and actual roles of individuals, the pressure placed on those actually holding high positions to acquire the ideal ones as well is enormous. Many of the rising bourgeoisie in England sought to become landed gentry there. Many racketeers and political bosses in the United States seek to become businessmen. The transition is sometimes spread over several generations. In "traditional" China prestige par excellence lay in the roles of the gentry. The gentry were expected to depend for income on the perquisites of political office and the absentee ownership of land. The most aristocratic

circles in the Western world have not for many decades denigrated the stain of participating in "trade" to the extent common even to the present day in China. The successful merchant, like all other Chinese, was under great pressure to secure the future of his family. This called for an education of sons directed to their entry into the bureaucracy, and hence a classical Chinese education, and the investment of capital in land rather than its continued reinvestment in the business. This investment of profits in land was further reinforced by the almost shady status of trade, and hence its vulnerability to exploitation could be prevented only by being able to buy and control officials or by having strong personal relations, preferably kinship relations with officials in positions of power. Land ownership, the major economic basis of the gentry, was also vulnerable to the pressures of the officials, but by virtue of its eminently respectable status and by virtue of the fact that an official threatening the income from absentee ownership of land simultaneously threatened all of the gentry in his area, income from land was not nearly so vulnerable in these respects as were both the income from and the capital invested in commercial pursuits.

There were other relevant factors, but these should suffice to indicate that there was a considerable source of motivation for a flight of both talent and capital from the merchant role. A merchant who got his sons a classical education, invested in land, and terminated his involvement in trade laid a firm foundation for gentry status for his family in the future. If he got a son or another relative into the bureaucracy, he established thereby connections that increased his security from exploitation. The emphasis on talent in the bureaucracy, even at its most corrupt, increased the motivation for sending the ablest of one's sons or male relatives into these roles rather than into merchant roles. These factors, combined with the open class structure of "traditional" Chinese society even as regards the merchants, made of the merchant role a transitory social status both ideally and actually. Merchant roles, if successful in a monetary sense, enabled one to accumulate the economic base necessary to guarantee, or make possible, gentry status for one's family in the future. A merchant was most fully successful to the extent that he and his ceased to be merchants and were enabled to do so by virtue of his commercial successes.

In this general background of "traditional" China, of which only some of the more strategic features for the present problem have been touched upon, there were several sources of stress and containment of stress that must be noted here. The factors of stress in this society have often been overlooked. The errors here have arisen largely from a presentation of the ideal rather than the actual picture of the facts of social life in China and from focusing attention on some phases of the life history of individuals to the exclusion of others. For example, the picture generally given of the "traditional" Chinese family is a picture of the ideal gentry type of family, a family type actually approximated by only a very small

minority of Chinese. An example of the second source of error mentioned above is to be found in the frequent treatment of the role of women as "secure" by contrast with the uncertainties facing women in modern Western societies. However tenable this may be as a comparative statement, it gives a misleading view of the position of Chinese women. At some stages of their lives they have indeed a large measure of security, but at others they are to a rather remarkable degree in positions of considerable stress. One of the most intriguing aspects about "traditional" Chinese social structure is that virtually every individual in the society went through periods of great social stress, but could, in terms of the ideal patterns at least, and to a high degree in terms of the actual patterns as well, look forward to stages of greatly reduced stress.⁹

Some of the most fundamental sources of stress in "traditional" Chinese society were concentrated within the strongest unit of solidarity of that society, i.e., the family. There is not time to go into these sources in detail, but short of a theory holding the Chinese to be inherently masochistic, notable stresses must be granted as the result of relations between fathers and sons, mothers-in-law and daughters-in-law, and men and women. Less notable ones perhaps resulted from certain relations among brothers, brothers and sisters, women in the family apart from the specific roles already mentioned, etc. Suffice it to say that there is good reason to believe that there were sources enough for motivation to defy, desert, or modify the family patterns if opportunities to do so presented themselves.

There were many other notable sources of stress in the society. General economic conditions were close to a subsistence minimum for a large proportion of the members of the society in the best of times. In times of crop failures, despotic officials and the like, whatever margin existed could easily be and often was wiped out. Relations between the townsmen and the villagers were an important source of difficulty. Those whom the peasants often regarded as exploiters (i.e., landlords, usurers, officials, merchants, etc.) were typically town dwellers. The economic structure of "traditional" China was one in which the townsmen were supported by goods and services from both the towns and the villages, but the villagers were supported almost entirely by what they produced alone. The village economy was the keystone of the whole economy, but as far as most of the villagers were concerned the flow of goods and services was a one-way affair. When times were difficult, the townsmen were likely to be regarded as the source of difficulties by the villagers whether this was in fact justified or not.

Another source of stress in the society was, of course, the breakdown of the bureaucratic system. The insulation of that system from the family pressures on which the society was based was not in fact effective for long. Graft and corruption grew as the dynasties went their course. As the

⁹ This whole question is taken up in some detail in *The Family Revolution in Modern China*, cited above (n. 1).

system decayed, the irrigation and communications systems also decayed. This had its implications in lowered productivity. More and more of a premium was placed on the officials squeezing all they could from whom-ever they could get hold of. Taxes were often collected years in advance. Combinations of officials, landlords, and merchants preyed on the peasants in many ways. In regions in which official power declined powerful families were often able to become the effective governing force in the area and exploit the rest of the population there. A popular saying in China held that it was better to live in a tiger-infested area than in one ruled by a bad government, and it is not without significance that the district magistrate's yamen was known frequently as a "tiger's mouth."

Despite these sources of stress and strain, the structure of "traditional" Chinese society seems to have been a remarkably stable arrangement for a nonindustrial society of the scale encompassed. It is the hypothesis of the present paper that the structure had built into it a very potent method of containing these strains. The family stresses in particular were contained by the fact that the possibilities for alternative employment for rebels were so restricted. As noted above, people were hired primarily on the basis of who they were, and the primary criterion of who a person was depended on his family status. A rebel from the family cut himself or herself off from this source of identification, and in doing so he or she was virtually certain to break the major ethical tenet of the society and to sin against filial piety. No respectable employer wanted such a person. The jobs open were those of extremely low status and jobs in which life was very likely to be "poor, nasty, brutish, and short." There were rebels, of course, but they were rather effectively disposed of by the opportunities open to them, and those who avoided these fates and who prospered were usually at some pains to disguise the fact that they had ever been rebels.

There were more positive sources of containment too. Each family head was emancipated from direct responsibility to other members of his family, but he was responsible to the ancestors for the welfare of the family. In so far as he continued sincere in these devotions, he was likely to try to prevent such stresses from getting out of hand. Nevertheless, it is hardly likely that this positive obligation did more than modify the extremity of these stresses.

Relative to the more general stresses in the society mentioned above, the overwhelming tendency for redress was via a refurbishment of the system rather than by revolutionary change. In the first place, the system, when relatively devoid of graft and corruption, was probably as effective and well-balanced a system of organizing and controlling a large scale highly decentralized system as the world has ever seen. This was particularly so since the units of the system were capable of such a high degree of economic self-sufficiency and hence, with the technologies available, so difficult to control in detail by a highly centralized governmental organization. In the second place, the relatively slow disintegration of

the dynasties gave the people a relatively prosperous period to look back on. The lack of basic structural changes either from within or without the system tended in this context to focus attention on reform of the system and return thereby to things as "they should be" rather than on radical change of the system. This tendency was further reinforced by virtue of the fact that the intellectual and ethical authorities revered by the members of the system were well aware of such breakdowns and had counseled dealing with them via renovation.

The Transitional Stage

There were two sources of change in the transitional period of modern China, and indeed they continue to operate today. The resultant stage of China is phrased negatively for present purposes—she did not make much headway with industrialization. Those sources were on the one hand the disintegration of the typical patterns of "traditional" China, particularly those having to do with the Imperial bureaucracy, and on the other those new forces that were introduced to China with the introduction from the West of social patterns pertaining to modern industrialization. The factors involved in the first have already been touched on above and are in general too familiar to require extended comment here. They involve the tremendous increase in graft and corruption in government to the point of virtual governmental impotence. In China the Ch'ing rulers fell and were replaced by a republic in name. This latter made a start in the direction of reform, but it had more to cope with than had past reformers. It had to cope with the sources of disintegration added by the new forces, and it did not succeed. The new forces precluded at least temporarily the return to the old situation, and the heritage of the old situation made the successful establishment of the new especially difficult—at least sufficiently so that none of the modern rulers of China have succeeded in coping with the situation in terms of the new forces. Certainly the Nationalist regime did not, and the Communist regime has not yet shown that it can do so.¹⁰

In so far as both China and Japan sought to industrialize (and one can make a good case for the fact that neither had much alternative given the general world situation), they were faced with certain common problems. They had with regard to industrialization certain advantages and certain disadvantages over those countries in which the development of industrialization in the modern sense was indigenous. Both countries had the advantage of starting with the latest available technological equipment without having to go through the process of developing the equipment with all the implications of that process in terms of obsolete equipment, etc. Both were in a position to take advantage of the lessons in

¹⁰ As regards the latter, there are indications that the fate of the former awaits it with relatively slight modifications unless it is able to find and adopt techniques quite at variance with present policies, but there is not time or space to go into this matter here.

terms of management and the like that Western countries had learned through costly experience. Finally both countries were in a position to use labor at much cheaper rates than were available to industry in the West. Each had considerable disadvantages as well. The stage at which they encountered industrialization required that the scale of modernization be relatively large, and the longer industrialization was delayed (as in the case of China), the greater was this problem. By the time each came to the process of industrialization, the type of capital equipment required was such that ready conversion of the prevailing economic resources into the required form of capital was not nearly so easy as it had been in those countries which industrialized slowly over a relatively long period. In the West the transitions were gradual, and capital and labor at one stage were gradually shifted into the forms required for the succeeding one. Similarly the changes in aspects of the social system other than the economic ones proceeded gradually. The institutional basis for change had a long, unbroken pedigree in much of the West, whereas in both China and Japan, radical breaks with the past were involved. For present purposes it is necessary to ignore certain special problems faced by China and Japan. Most notable in these respects is the demographic problem. In kind this problem was similar for both East and West, but the differences in degree, timing, and alternatives open were enormous.

There is not space here to detail all of the special features of the new forces that were imported into these two societies. For present purposes brief mention of two will have to suffice. In the first place, the new forces placed a tremendous emphasis on an entirely different sort of social relationship than had been common in either China or Japan. In the second place, the development of industrialization when it became available to China and Japan, given their respective economic bases, had of necessity to be carried out on a large scale or none, at least with regard to many crucial areas.

In the sphere of relationships industrialization carried with it an emphasis hitherto unequaled in social history on what the sociologists speak of as highly rational, highly universalistic, and highly functionally specific relationships. For present purposes these terms may be explained as follows. In a highly industrialized situation a tremendous amount of action has to be based on what would amount to tenable engineering criteria of efficiency and the like, rather than on traditional arguments about the right and wrong way to do things. The individual has to think critically and in scientifically tenable terms about how to do things, what to buy, when to sell, where to locate, and the like. In regard to choosing people for jobs and the like he has to place great emphasis on what a person can do that is germane to the reasons for which he is chosen—on his abilities rather than on who he is. In this sense great emphasis must be placed on highly universalistic rather than on particular-

istic criteria. Finally, in many of the relationships in a highly industrialized situation the obligations, etc., involved in a relationship must be precisely defined and delimited regardless of how complex they may be. At least a tendency in this direction is extremely important. In this sense an emphasis is placed by modern industry on functionally specific relationships rather than on functionally diffuse ones.¹¹

With regard to the special problems of scale involved in the industrialization of China and Japan, or of any late-comers to industrialization for that matter, the basic problem involved is, perhaps, the implication of these scale requirements for the problem of planning and control. Given the discrepancy between the basis of industrialization in these two countries and the stages of development it had reached in the West, it was necessary for these countries to import en masse what had been developed gradually elsewhere. Railroad systems and communications in general had to be undertaken on a large scale if they were to be of maximum usefulness or even to be useful at all. The lack of ready convertibility of the capital in private hands to uses of this sort virtually forced governmental involvement in these projects; certainly this was true if, as in the case of Japan, the members of the system were anxious to carry out such a program without permitting control of the program or of the country to fall into the hands of foreign individuals or foreign governments. It is perfectly true that industrialization grew up in countries like England and the United States with relatively little centralized planning, and it may even be true that it could not have developed had such planning been present, but China and Japan were not developing industrialization. They were taking it over after it had become rather highly developed. The gradual passing from a system of highly decentralized, highly self-sufficient units to highly interdependent ones could not be repeated in these countries. They were faced at the very outset with large-scale problems of co-ordination if they were to take advantage of their special situation as late-comers to industrialization. They could not even modernize methods of agricultural production without raising a whole host of other problems such as systems of roads, repair depots for equipment, agricultural stations for testing and growing special seeds, etc.

This problem of co-ordination involves a problem of control, by force if necessary, in cases in which deviance develops or threatens. More importantly it requires that there be patterns in operation that tend to minimize the development of deviance. In the last analysis it is the latter rather than the former that is crucial because of the limited effectiveness of the use of force and the fact that every effective use of force on a large scale implies the presence of patterns that motivate conformity without the actual invocation of force.

¹¹ For discussions of the relevance of these relationship aspects to industrialization, see Talcott Parsons, *Essays in Sociological Theory* (Glencoe, Ill., 1949), pp. 185-199; and M. J. Levy, *The Structure of Society*, pp. 238-298, 421-443, etc.

In the transitional period in China the internal sources of change provided motivation aplenty for individuals to try the new patterns introduced from the West. The family strains alone were capable of motivating many individuals to seek alternative roles if those were available. By the latter part of the Ch'ing Dynasty the disintegration of the Imperial bureaucracy was far advanced. This disintegration itself put pressures of many sorts on individuals. Tenancy rates were high, usury was extreme, graft and corruption were such as to subject individuals to the most capricious types of exploitation, irrigation systems were in bad repair—conditions had reached a state at which many were willing to try anything.

Into this situation which had been seen in China at the end of dynasties before, the new forces were injected. There was plenty of motivation for the injection of these forces by Westerners either on a peaceful or a forceful basis. China represented vast potential markets and also a vast potential source of production. The fact that the Chinese had little with which to buy foreign goods went along with the extremely cheap labor force, and the latter meant that China could be used by others as the scene of low-cost production for sale outside of China. The new patterns from the West were cast into the picture of dynastic decay, and they immediately began to disintegrate the central form of control in the society.

For the first time in modern Chinese history at least the strength of the family system was seriously undercut in these areas affected by the new forces. These new patterns wherever introduced offered the possibility of alternative employment on relatively objective grounds, and consequently they offered those subjected to strains by the prevailing system the possibility of a way out that did not depend upon a refurbishment of the old. The absolute amount of industry introduced was never great, but the effects of it spread far beyond the limits of the new ventures themselves. Jobs offered on the new basis attracted reservoirs of unemployed to the areas concerned, and these offered a radical price competition for the more traditional forms of employment and so threw these open to a greater degree of relatively objective employment opportunities. Family controls disintegrated in and around the most populous centers of China at the very time that the controls of the Imperial bureaucracy were in a state of disintegration. The individuals who either willingly or unwillingly were separated from their families as the major orientation of their decisions became radically individualistic by default, and thereby they compounded the difficulty of controlling and co-ordinating their activities. At the same time the introduction of extremely cheap goods competed with handicraft labor, lessened the self-sufficiency of the peasant families, and increased their vulnerability to exploitation by the townsmen.

At the same time the scale on which industrialization had to be carried out, if it was to be carried out at all, was such that a great deal of co-ordination and control was necessary. The groups from whose ranks officials had been drawn in the past were completely incapacitated by their

training to do the sort of planning necessary in this situation, for they were above all trained to seek solutions in precedents (and there were no indigenous precedents for these requirements), to operate on the basis of extremely vaguely defined and delimited relations, and to select people on the basis of who they were rather than on the basis of what they could do. The merchants were only to a slight degree convertible for the new requirements. They were used to thinking primarily in commercial rather than in industrial terms and to taking their capital out of such pursuits and putting it into land as soon as possible. They were as little oriented to the reinvestment of talent as they were to the reinvestment of capital. Furthermore, in a situation of extremely unstable governmental control, they had more to lose if they tried to set up plants and factories than if they depended primarily upon training. In the former case a turn of the political wheel could cost them not only their inventories but their capital investments as well, and these capital investments were more difficult to conceal or move than were inventories. The international settlements offered some protection in these respects, but nevertheless there was a tremendous motivation to seek profits on a commercial basis rather than on an industrial basis.¹²

The industrial development, however, was essential to solve certain other problems, if China could not return to a refurbished form of the "traditional" patterns. One of the great sources of strain between the towns and the villages lay in the fact that the towns were supported almost entirely by income that had its origins in the villages. They produced for export to the villages almost nothing that was capable of increasing net productivity there and hence bettering the lot of the peasants. Modern industry could have produced goods and services cheaply enough to compete with handicraft labor and could have made available new tools and techniques, but only the former got anywhere for the profit in them was immediate and obvious. The net result of this was a further impoverishment of the peasants which increased their alienation and played a vital role in their at least passive support of a new change in government that overthrew the Republic that had replaced the Ch'ing Dynasty.

In those few areas in which modernization did make some headway the same sort of changes seen elsewhere in the world with such changes were begun. Again family change was prominent. The family changed in composition, type, role in the life of the individual, and all the rest, but what is important here is that it could no longer be used as a basis for control of individuals. And yet Chinese society had developed no other forms of control that would operate effectively and stably in the absence of family controls. For the last five decades or more China has been a sort of no man's land with regard to modernization. It has bits and parts of it, but it has not achieved any considerable level of industrialization. It

¹² This tended, of course, to drain off resources from China just when it was strategic that they be carefully husbanded.

also has not been able to regain a stable version of the "traditional" society it once had. The present rulers of China offer a picture of momentary stability, but so far they have not accomplished anything that indicates any basic alteration in the picture of Chinese social structure. They have not accomplished the changes necessary for industrialization. They have eliminated, at least for the time being, the usual forms of graft and corruption, but the prognosis is for their replacement on the basis of party membership rather than on the more usual nepotistic basis. If the present regime is not able to industrialize, its general prognosis would seem to be much the same as that of its predecessor.

The Resultant Stage

In the case of China the resultant stage is not different from the transitional one in respects relevant here. The most relevant characteristic of it for present purposes is that industrialization was unable to make any dramatic headway in China. It is true that many of the "traditional" patterns seem doomed, but the stage reached, at least prior to the Communist hegemony, was one in which there was an uneasy balance between the new and the old. The inheritance of the past stood out as a major obstacle to the firmer establishment of the new, and what in effect was established of the new by its direct and indirect effects undercut the possibility of the stable re-establishment of the "traditional" patterns. The situation was, of course, immensely complicated by the invasion by Japan and the internecine strife between the Nationalists and the Communists. Nevertheless, prior to the invasion and the effective threat of the Communists, China had shown no signs of competing with the rapidity and thoroughness of industrialization that were achieved by Japan in a corresponding period.

THE PROBLEM OF CHANGE IN JAPAN

The Initial Stage

The initial stage taken for Japan can be set up for the purposes relevant here by contrast with that of China. There were, of course, many similarities. Both of these societies were predominantly agrarian in their systems of economic production. In both cases the nonagrarian members of the society found their basic means of support in the goods and services produced by the peasants. The peasants in "traditional" Japan were also to a very high degree self-sufficient in the matter of production and consumption and received little in return for the portion of their production that was received by others. Certainly they did not receive goods and services from the nonfarmers in the society that permitted or accounted for a rise in the net productivity of agriculture. In the system of production of "traditional" Japan there were no elements of modern industrial production. As in China relationships in most spheres, and certainly in the economic aspects of action, were to a very

high degree traditionally determined. People were selected for relationships primarily on the basis of who they were rather than what they could do, with certain peculiar and important exceptions, as will be seen below. The relationships between individuals contained many specific obligations and rights, but they were in strategic respects only vaguely defined and delimited. The great emphasis in relationships was not upon what was specifically covered but rather upon the question of to whom a given individual owed loyalty under any and all possible conditions. As in China, the vast majority of people lived very close to the margin of subsistence for the society, and a relatively small group lived on a comparatively luxurious basis. The family was a fundamental unit of solidarity in Japan as in China, and many of the decisions and activities of daily life were family oriented. As will be seen below, however, action in Tokugawa Japan was not in the last analysis nearly so overwhelmingly family oriented as in China. In fact family orientation took a clearly secondary position relative to another solidarity orientation.

As in China, the role of the merchant in Japan was an ambiguous one. Merchants were rated well below the ruling group, the peasants, and the artisans. Perhaps their only inferiors, ideally speaking, were two outcast groups, the Eta and the Ainu, although even here the picture was sometimes confused by the appearance of Eta in merchant roles. As in China, the ideal position of the merchants was definitely belied by their actual position, and in the transitional period (the degeneration of the Tokugawa Shogunate and the early establishment of modern Japan) the merchants of Japan assumed very prominent roles indeed. In the modern period (i.e., the resultant stage), of course, the roles of the merchants and their successors became both respectable and esteemed ideally as well as actually.

In "traditional" Japan there existed the sort of distinction between the towns and the villages that existed in China, though in Japan one must include in the category of towns the headquarters of the main feudal lords, the daimio. The feudal lords and their retainers, who formed the ruling class of Japan, depended primarily on the income from land, and hence on the labor of the peasants, as did the gentry of China, but their relation to the peasants was of quite another order. The artisans and merchants of Japan oriented their activities, particularly in their economic aspects, to those members of the ruling class, and of course to supplying their own needs. The peasants were not beset by usury in the same sense that the Chinese peasants were. Land was not ideally speaking held by the peasants, but they felt the weight of usury indirectly because their lords sought greater exactions from the peasants to meet their greater debts to the merchants and moneylenders. Taxes as such were hardly experienced by the peasants. The peasants were virtually all in the position of tenants or serfs, ideally speaking, and their lords exacted a portion of their produce as a matter of right. The Shogunate itself did

not depend upon taxes as a source of income but relied on the income from the lands held by the Shogun as a feudal lord and upon such special requirements as he might from time to time exact directly or indirectly from the feudal lords (especially the daimio).

The exactions from the peasants were great. Early in the development of the regime the Shogun issued regulations requiring that the peasants be kept so busy on their farms night and day that they be unable to think of anything save agriculture. The attitude held that benevolence to peasants consisted in keeping them neither in extreme distress nor in a situation of prosperity. This policy toward the peasants was integrally related to the attempt by the regime to minimize the possibilities for social change, a policy that will be taken up below, but it certainly had its effects in setting the economic position of the peasants in the total scheme of Japanese social life as well. Economically the position of the peasants was likely to be judged from their point of view in terms of bad or worse rather than in terms of good or better. The social analyst is not beset by the problem of what the peasants did in "good times" but rather by the problem of what they did when things got particularly "bad." In the latter event some peasant revolts occurred, and these offer the social analyst one of his most revealing insights into the peculiar type of strength of the feudal regime in Japan.

As in China the governmental structure was a combination of highly centralized and highly decentralized elements. The system of controls set up by the Tokugawa rulers was certainly in its initial stages one of the most tightly and effectively controlled feudal systems the world has ever seen. The strong men of the Tokugawa regime were well aware of the sort of trouble nobles could give if they were permitted to get out of hand, and they set about deliberately to make this impossible, as will be discussed below. Nevertheless, in the local areas controlled by the daimio, the discretion of the daimio was virtually unlimited as long as it did not threaten in any conceivable way the precedence and power of the Shogun. Neither the centralized elements nor the decentralized ones were of the same sort as those in China however. One of the main differences in these respects lay in the fact that decentralization went all the way down the hierarchy in China, stopping in essence only with the family head, whose powers were not decentralized though they were sometimes delegated. In Japan the decentralization lay in the scope of power left to the daimio (as in the case of the scope of power left to the governors in China), but the daimio did not necessarily decentralize their control further. Certainly the system in Japan was not such that the position of family head was in general as strategic as in China.

As in China there was in fact a bureaucracy that conducted and was held responsible for major administrative functions, but it was not in anything like the Chinese sense a single bureaucracy for the country as a whole. As in China there was considerable need for and emphasis on

ability on the part of the persons who fulfilled these administrative roles. Unlike the Chinese bureaucracy, that in Japan was not set up as a separate concrete organization with members chosen for ability and insulated, ideally speaking, from other concrete organizations in the society. In this sphere the Japanese resorted to a most interesting social device, and this device was one that had considerable adaptive value in the period of modernization. In Japan the family system was also a major focus of loyalty despite the fact that it did not take the same order or type of precedence as that taken by the Chinese family system. Unlike the case in China the major administrative posts were hereditarily determined. In China this was only true, ideally speaking, of the Emperor's position.

This situation also obtained among the merchants. Among the merchants of Japan there was not the possibility of leaving merchant roles that existed in China, as will be seen below, and since the rule of equal inheritance on the part of all sons that held in China was not characteristic in Japan, there was not the tendency for a man's successor in these roles to inherit something less than the estate that he had left intact. The Japanese worked out, either deliberately or not, a sort of civil service system by adoption. Sometimes these adoptions would even cross the ordinarily closed class lines. A daimio might adopt as his successor an exceptionally able young man from among his samurai, who in general performed administrative functions for him. He would ordinarily seek an able man from within his own family if possible, but he could and sometimes did go outside the family or the kinship structure as a whole. Furthermore he could and sometimes did supplant his actual eldest son with a person adopted as eldest son. Such adoptions were generally made only after the previously legitimate successor, if any, had shown himself to be conspicuously unable. When such an adoption took place, one had an administrator picked for ability. But one did not have to seek vainly to insulate this man from a sea of nepotistic and similar conflicting pressures. He was put in a role such that all of these pressures motivated him to use his abilities to the utmost for the administrative purpose for which he was chosen. Family, friends, feudal loyalties, everything he had been taught to respect, in both fact and ideal, required the maximum objective use of his talents in the role for which he was selected. The conflict between the betterment of one's family and the proper fulfilment of office so common in China was not to nearly the same degree a problem here because one's family and one's office were combined.

This was done by the merchants as well as by the feudal lords. Japanese merchants, unlike Chinese ones, were not preoccupied with the use of merchant status to abandon merchant roles. They were rather much concerned to recruit on the basis of competence family members who would in fact remain in merchant roles and preserve the welfare of the family thereby. This particular technique was continued by the successors of the merchants in the modernization of Japan. The zaibatsu,

who in strategic numbers developed directly out of Tokugawa merchant families, were well known for this. These families instituted a sort of business civil service within their companies, and those men most successful in the competition and destined to become major figures in the various enterprises of the family were frequently brought into the family membership itself. It was, in a sense, the Japanese equivalent of giving a particularly important member of the administration of a stock company a major block of stock in the company, presumably tying thereby his self-interest and the interest of the owners of the company as tightly together as possible.

There were two major differences between Chinese and Japanese family structure that are relevant for present purposes: (1) the manner in which family considerations entered the total social picture and (2) the fact that there was not in Japan a single ideal type of family for the entire membership of the society. The first of these turned on the difference in manner of integrating the two societies; the second turned on the marked differences in class structure in the two societies.¹³ Both will be discussed below.

A third difference that was probably strategic for present purposes lay in the emphasis on primogeniture in Japan. It was not always true that the oldest son in fact succeeded to the family property or rights. He could be and sometimes was replaced by someone adopted as an oldest son, or he could even be replaced by a younger brother, but the rule practiced in China of equal inheritance among all the sons was not followed in Japan. This made possible at one and the same time the continued concentration of wealth in a single family line and the creation of a cadet class. Both of these are closely related to the feudal social structure that will be discussed below.

Despite many similarities between "traditional" China and "traditional" Japan the total structures of the two societies were markedly different. "Traditional" Japan was a feudal society in the sense in which that term is used here, or at least a very close approach to one, and this was not true of "traditional" China. Furthermore, when one looks into the history of Chinese and Japanese experience one is struck by the contrast between Chinese and Japanese attitudes toward general social control and the maintenance of social stability. The Chinese had an attitude much like that attributed to Locke. The structure of society would function to the best interests of everyone if it were set up in accord with the Will of Heaven and left as much alone as possible, with occasional interference only to restore the Will of Heaven. The rulers of Japan, however, often seem to have been preoccupied with the possibilities of manipulating social structure for purposes of control, and with the strategic role of those who know

¹³ This had many implications. For example, in Japan the possibilities of alternative employment were even more restricted than in China because of the closed class situation and because of the relations of the peasants to their lords.

how to plan and execute such manipulations. There is certainly evidence that the strong men of the Tokugawa knew what they were about in these respects, and there is at least good reason to suspect that those in power during the modernization of Japan were up to the same sort of thing.

The founder of the Tokugawa regime, Iyeyasu, and his followers, especially Iyemitsu and Yoshimuno, seem certainly to have been conscious social engineers. The early Tokugawa (Iyeyasu and Iyemitsu) were well aware of the vulnerabilities of social control in a feudal system. It was one thing to order a power hierarchy and tie land distribution to it in the feudal manner. It was quite another to retain control over the nobles once great power had been allocated to them. Iyeyasu's predecessors and colleagues, Nobunaga and Hideyoshi, had subdued just such a set of nobles and thereby made the Tokugawa regime possible. Iyeyasu and Iyemitsu had no intention of having to do it again. At a time when the nobles were still relatively weak and they strong, the Tokugawa set up a system intended to defy the decay so common in feudal systems. For one thing they set up an official capital city in the form of a court at Yedo. Then they made it clear that, although they were not the emperors of Japan, they were not merely the first among equals as far as the nobles were concerned. Each feudal lord of any consequence, the daimio in this case, was required to spend a definite portion of his time at the Shogun's court, and when he was not there, he had to leave members of his family (preferably his wife and heirs) in his place. The only solidarity in Japanese social structure that offered any threat to the primacy of the obligation to one's overlord was the family bond, and by this hostage system the Tokugawa tied the two together as far as the daimio were concerned. One might, as will be shown below, meritoriously sacrifice one's family to fulfil one's obligations to one's overlord, but to sacrifice one's family in the attempt to defy one's overlord was sin itself in that society. Even if one lord did attempt revolt, the pressures that the Shogun could bring to bear upon the rest through their own feelings of loyalty and the hostage system were enough to guarantee the Shogun overwhelming allies in addition to his own strength.

Having established their regime, the Tokugawa attempted to guarantee its security into perpetuity. This was of course futile in the long run, but the thoroughness of the attempt and the relative stability it achieved for some two and a half centuries are illuminating. The Tokugawa attempted in every way possible, at first, to prevent change. There were detailed regulations as to what was expected of virtually every type of person in the society. These regulations were made as minute as possible, the more so the more an individual's role was likely to be one in which deviance on his part could be significantly disruptive of order in the society. The regulations covered dress and deportment to such an extent that deviant activity was likely to be immediately and visually obvious. Individuals failing to offer the proper homage in a given situation could be

and were on occasion cut down by the samurai without further question. On one occasion in the nineteenth century the automatic application of such measures involved the Japanese in a serious incident with the British—an incident that brought home radically to the Japanese their utter defenselessness before the Western powers.¹⁴

Whatever their methods or whatever the foundations on which they built, subjects of the Tokugawa both knew and, of their own will apparently, came to accept the tremendous emphasis placed on loyalty to the various positions in the feudal hierarchy. Every man's first duty was to his overlord. This obligation surpassed even the family obligation, and it was in considerable part because of this that the role of the family in Japanese social structure was so markedly different from that in China. The extreme emphasis placed on this sort of loyalty is well illustrated in the case of the nobility by the Tale of the Forty-Seven Ronin and in the case of the peasants by certain of the phenomena associated with the peasant revolts under the Tokugawa regime. In the case of the Forty-Seven Ronin the facts are perhaps not as important as the legend that immediately sprang up about them. Much was made of this legend in the transitional and resultant stage of Japan. In brief the legend has to do with a group of retainers who sacrifice all other goals to avenge the death of their immediate overlord. In order to throw their master's enemy off guard they are credited with virtually every act held evil, especially the ruination of their own families. After he has relaxed his guard, they slay him. Their vendetta, however, has been at least superficially in defiance of the Shogun's law against vendettas, so they fulfil their obligation to the Shogun by peacefully surrendering themselves with never a plea for mercy. The Shogun despite his own respect for their extreme regard for loyalty cannot let their breach of the law go unnoticed. Their fate is sealed, but the Shogun does permit them to atone for their crime by the honorable ceremonial suicide of the samurai. All of them commit *seppuku* and complete thereby all of the responsibilities they bear. Their master is avenged; their duty to the Shogun is fulfilled; and last their family obligations are satisfied because they leave their families a most honorable heritage. They have sacrificed everything to the ideal of feudal loyalty, and in so doing they have realized everything.

The peasant revolts sometimes furnished an equally impressive example

¹⁴ The Namamugi incident (1862) involved a British subject named Richardson, who was overwhelmed by the magnificence of an approaching daimio's retinue, remained mounted, and stared. It was gross insolence and lese majesty from the Japanese point of view, something every person of low social status knew better than to do. The daimio's samurai cut down the offender. The British in reprisal made their first punitive use of a breech loading naval rifle to pound to pieces certain Japanese forts which had, perhaps, the most modern artillery in Japan. The Japanese were most impressed. They learned far more from the incident than the fact that Westerners were not sensitive to the intricacies of feudal respect and the like.

of the emphasis placed on loyalty to one's masters. During the Tokugawa regime the exactions placed upon the peasants sometimes were such that the peasants took matters into their own hands and backed their demands for reform by a show of force. It was quite clear in some of these cases that they in fact commanded the force necessary to carry their points, and in fact their demands were granted. Even after their power had been clearly demonstrated, however, once their demands were granted, their leaders on more than one occasion either were taken by, or themselves surrendered to, the very authorities against whom their use of force had been successful. These leaders usually suffered most painful deaths apparently without ever becoming the cause for a further demonstration of force on the part of the peasants. The peasants seemed to feel that, while they had had no choice but to revolt, someone had somehow to pay for this violation of things as they "should be."

In Japan loyalty to the feudal hierarchy took clear precedence over loyalty to one's family. This did not mean that loyalty to one's family was unimportant. It was tremendously important. It did mean, however, that one had two means of control over the deviance of individuals, control as in the Chinese case through the family organization and direct control through the feudal hierarchy. One of the implications of this dual hold on the individual was that the possibility of individualism by default was minimized. Even if an individual were to lose or be separated from his family, he could not lose or be separated from the entire hierarchy of persons in positions of power over him. One of the most important arguments used in the amazingly peaceable deposition of the Shogun was, of course, to the effect that the Shogun had himself violated his loyalty to his overlord, the Emperor. The emphasis on loyalty was never denigrated. The people were simply told that this loyalty was due directly to the Emperor and his officials and hence to the Japanese nation and not to the Shogun.

The transition was facilitated by another aspect of the society. The higher up one was in the social scale and the greater his basis for power in the feudal system (under the Tokugawa the Emperor and the Kuge are exceptions to the fact that high social position and great basis for power went together), the more was expected from him in the form of careful indoctrination about loyalty to the hierarchy. In the Ronin tale, for example, the Ronin were in actuality forgiven their unintended transgression against the Shogun, but many other samurai were executed and disgraced for not having fought strongly enough to prevent their act. The leading daimio had been weakened in many ways by the end of the Tokugawa, but with rare exceptions they saw the whole basis of their position swept away in the name of the good of the nation without a protest or even with their aid. Those exceptions that did arise arose in a different conception of where the good of the nation lay and not in where the good of the daimio lay.

Some of the differences between the "traditional" Chinese social system and that of "traditional" Japan have already been mentioned in the preceding discussion. One of the most important that has cropped up above is the difference in class system in the two societies. As noted above, China had *ideally speaking* almost an entirely open class system.¹⁵ In the Japanese case the picture was almost exactly the opposite with regard to the ideal patterns. Ideally speaking the class system was completely closed. One was born to the social position of one's parents. It was expected that one stay in that position and that one's children and children's children stay in it as well. Actually there was some mobility, but it was rather carefully hedged so as not to disturb the general or the ideal patterns. There was some mobility within the class distinctions. One could, for example, rise higher or fall lower in the scale of daimio or peasant families, for example. There were also occasional cases of families that were demoted, though these were more likely to be wiped out. There were cases of elevation in status by the Shogun, but again these were probably rare. Certainly the most strategic form of mobility as far as its bearing on the present problem is concerned is one that appeared to involve no interclass mobility at all. This was the mobility involved in the peculiar "family civil service" mentioned above. But it is the essence of the adoption procedure that one's past position is in theory wiped out; the adopted son is at least in fiction held always to have been what he has just been made. Furthermore such elevation was neither so frequent nor was it conducted in such a way that it could be made the goal of achievement by others generally in the society. It was a bonus that came occasionally; it was not something that could or should be striven for. This lack of general motivation to compete no doubt resulted in a failure to realize many human resources in the society, but at least in the Tokugawa period the strategic significance of relatively small differences in skill was not such as could be met only by large scale motivation of this sort. In the modern period when such differences did assume importance, an embryonic pattern of mobility that could be adapted to new conditions was in existence. Furthermore, the basis for such mobility in Japan was specifically relevant to the position for which the person was chosen. This was in marked contrast with the system of China, which had more of the character of the old British Civil Service in which persons were selected primarily on the basis of examinations on a general intellectual background that was not necessarily germane to the roles that a person would fulfil after selection. For this purpose there was a sort of "on the job training" or none at all. In Japan those selected for advance by adoption were not selected until they had already shown the specific abilities for which their services were desired, and this in turn gave a precedent of sorts for later selection of persons on the basis of germane abilities in the modern period in which such a basis became so important. Furthermore, initially at

¹⁵ See pp. 502, 503, above.

least, it gave a basis for selection that would interfere with established family patterns to the minimum degree. Finally in the Japanese system the person so selected was specifically cut off from his past particular social connections with those in his old class position, at least ideally, and therefore it was not expected that in his new role the interests of these actual former family members, etc. would be a primary source of motivation for him and hence prejudice, unless properly insulated against, his performance of duties in his new role.

The significance of this emphasis on closed classes in Japan was widespread for the problem of Japan's transition. The accustomed lack of expectation or striving on the part of the vast majority of the population, the peasants, meant that at least in the initial stages of change, the expectations of the peasants would be modest, that they would be accustomed to sacrifice directed by a ruling group, and that comparatively small material improvements in their lot would make a comparatively big impression upon them. The upper classes were also specially prepared for control and sacrifices, and to some extent these latter, both by the adoption procedure mentioned above and the increasing role of the merchants, as will be discussed below, were prepared to have many roles performed by those most competent to take them over. This was of far-reaching importance because like the gentry in China the upper classes of Japan, ideally speaking, were as a whole almost completely unprepared and unadaptable to the requirements of the roles necessary if Japan were to modernize rapidly and thoroughly, especially given the fact that Japan was a late-comer to industrialization and was therefore involved in the problems of scale mentioned previously. Although they were ill prepared to assume such roles of leadership, they were beautifully prepared in Japan to step aside with relatively little disturbance, and this, of course, was conspicuously not the case in China. Neither warlordism nor a yearning for, and attempt at, the re-establishment of the "good old days," so prominent among the gentry of China, was a substantial problem in the transition of Japan. The "civil service by adoption" gave a pedigree to justify the transfer of those of the old upper classes who had strategic abilities to roles of importance in the new order of things, and the special role of the merchants offered another source of supply of more generally adaptable talent.

The general argument of this paper includes two points of special importance. The first is that the differing systems of control over individuals in China and Japan made for much of the difference in their respective experiences with industrialization. The second is that what on the surface in the early nineteenth century might have seemed like comparatively small differences in the roles of the merchants in the two societies was also of special importance in the different experiences of the two countries. This difference between the merchants was directly related to the general and the specific characteristics of feudalism in Japan. As

regards the general characteristics the most important factor for present purposes is the closed-class character of "traditional" Japanese society in contrast with that of Chinese society. In both societies the merchant role was, ideally speaking, one of extremely low prestige. Actually in both societies, as has been noted above, the merchants were often powerful and even respected. But in Chinese society the open-class character of the social system held out to all merchants the possibility of achieving for their families, if not for themselves, the genuinely ideal social position of gentry status. Thus, as noted above, there was motivation aplenty in China for a flight of both talent and funds from the merchant field. These were not important features of the Japanese system. No matter how much he might wish to do so, a merchant could not become a member of the nobility. He might become the power behind the throne of a daimio, but he could not become one, nor could his family after him acquire that status. The best he might hope for would be the entrance of a daughter into such an upper-class family by marriage. Such marriages as this were in the nature of family foreign relations. They might increase the prestige and security of a merchant by allying him more tightly with members of the upper classes, but they did not make him or his family a member of that class.

There was another strategic difference from the Chinese. Power in the feudal hierarchy was tied to land ownership by the daimio. Even the daimio retainers, the samurai in general, were given rights to the income from land that was part of the overlord's domain rather than title to land itself. The feudal relationships of individuals to the land were an important part of social position in Japanese society, but land could correspondingly not be bought and sold with any general freedom, at least ideally speaking. This meant that many actual transfers of land were exceedingly vulnerable to confiscation. These limitations on the acquisition of land either as a symbol of social status or as a category of investment meant that one of the most prominent forms of capital flight from merchant uses in China was virtually out of the question in Japan. Talent could not be readily drained from the field because of the class system. Capital could not be readily drained from the field either, because of the closely associated restrictions on the holding of land. The merchants of Japan could not seek to minimize their vulnerability to the political hierarchy by either a personal or capital flight from merchant pursuits. Through no virtue of their own, perhaps, they were forced to think in terms of buying and selling and production and reinvestment. Their hope for security lay in being more and more successful merchants and in having their successors continue in that vein. Their abilities in exchange were vital to the upper classes. Their security and achievement lay in playing those roles well, and this they did so very well that by the end of the Tokugawa regime many of the most striking features of Japanese society were aspects of the activities of the merchants.

The potentiality of the merchants as a group was built up in still another way in "traditional" Japan. The early powers of the Tokugawa planned carefully and relatively well to minimize the possibilities of change of any sort and of a successful revolt by the daimio in particular. Here the peculiar qualities of Tokugawa feudalism came into play. The basic structure of the Tokugawa economy as in other feudalisms was the use of land, ownership and control of which was tied to the power hierarchy. Each major fief was to be in essence a self-contained and highly self-sufficient economy in addition to its other characteristics. But this carried with it, of course, the possibility of a rebellious noble developing a basis of power on which to stand in opposition to the Shogun. Iyemitsu or his advisers put a stop to this possibility by the special hostage system described above that tied feudal loyalty and family obligations together for the top power holders in the society. The elaborate ceremonial involved in the Shogun's court had its functions as a damper on change, but the requirements of this ceremonial plus the necessary expense of maintaining elaborate establishments in Yedo plus the requirements of graft that were a prominent feature of that court called for middlemen to convert the rice income of the daimio into a form of wealth useful and negotiable at court. The daimio themselves could not carry out those functions because it was socially degrading on the one hand and involved them in relationships outside of areas that they controlled on the other. The very techniques of the Tokugawa for tight control of the nobles guaranteed the merchants a vital role in the society. Furthermore their position as a class ideally beneath the notice of the nobles gave them a certain freedom of operation in meeting new situations that did not exist for the members of the upper classes. In tying the nobles down the Tokugawa unwittingly turned the merchants loose. At the same time the closed-class system prevented the powerful merchants from assuming the carefully restricted roles of the upper classes whom the Tokugawa had expected to be and to remain the sole foci of power apart from the Tokugawa themselves.

The Transitional Period

As in China the transitional period in Japan was compounded of the disintegration of the old order and the introduction of the new forces. The new forces were virtually identical, as has been pointed out above. The old order was different, however, and in the transitional stage in Japan industrialization made dramatic headway, which was not true in China. Furthermore the transition was made without the chaotic state of affairs that characterized China. Here we shall first examine the disintegration of the old order prior to the introduction of the new.

It is perhaps not an exaggeration to state that the disintegration of the old order is best mirrored for present purposes in the rise in actual power and importance of the merchants. They made their position, ideally a minor interstitial one, the kingpin of the whole system. The daimio

relied upon them for their needs of exchange, and their reliance made the merchants powerful and the nobles dependent upon them. Outside of the peasant households and outside of the strictly agrarian pursuits all other aspects of production and consumption came to revolve around the merchants. The artisans produced for the wealthy and for other artisans. They depended for food on the production of rice and other staples by either the farmers or the fishermen of a given daimio. The upper classes depended upon the artisans for much of what they consumed. The scale of operations precluded barter as a daily means, and the merchants provided the facilities to make barter unnecessary. They not only traded; they financed production and consumption; they developed banks; they created commodity markets and dealt in futures as well as in concrete goods. They became in short general entrepreneurs for endeavors of all sorts. It is not a matter of chance that the zaibatsu of modern Japan who grew out of these merchant roles characteristically built industrial and economic empires of the most diverse sorts. In the modern West such great family enterprises as have grown up have tended to specialize to a much greater degree in, say, banking or insurance or even the industrial production of a particular sort of product with others added primarily if germane to that original one.

In their economic roles at least the merchants became a sort of middle class such as had developed in Europe. The term "middle class" is a dangerous one in this context, for there are those who would say that the appearance of a middle class solves virtually all problems of industrialization and that such a class was lacking throughout the Far East. This middle class was quite different from that of Europe in at least one respect. The relatively strictly maintained feudal distinctions tended to keep people from coming into the group as well as from getting out of it, so that in so far as it partook of the characteristics of a middle class it was a very restricted one in numbers. The merchants did not occupy such a role in China because the open-class nature of the system prevented the way of life of the merchants ever from becoming an ideal pattern in its own right, as it certainly did in both Europe and Japan.

As the merchants grew in power and wealth, the proportion of the goods and services of the total society that went to their maintenance increased. They developed a theater and a literature largely of their own. They maintained more or less elaborate establishments—not sufficiently elaborate to threaten their capital base as exemplified by the retainer system of the feudal lords, but costly none the less. Sir George Sansom in his *Japan, a Cultural History* (New York, 1938) gives a vivid picture of the world in which those merchants (*chōnin*) lived. This is mentioned because it is closely related to the major factor that undercut the power of the Shogunate and caused its future to be threatened quite apart from the blow to the Japanese of Perry's forced entry of Japan. Japan was like China in that the basic support of the entire economy came from

the production of the peasants. The townsmen produced little or nothing that was essential to the farmers or that increased their net productivity and so enabled them to better their standard of living. It is true that the peasants were not accustomed to much, but the increasing amount of their production that came to be drained off into the pockets of the merchants and hence into support of the townspeople, let alone the amounts that went to support the feudal court proper, kept increasing the burden upon the peasants. The increase in peasant revolts as the Tokugawa regime aged has been commented upon and documented by many, especially by Professor Hugh Borton ("Peasant Uprisings in Japan of the Tokugawa Period," *Transactions of the Asiatic Society of Japan*, XVI, May, 1938). By the time of Perry's appearance, the whole society was ripe for some change of control at least, if not of the general social structure.

Most of the stresses and strains already mentioned in the case of China were also operative in Japan. These are sufficient to account for motivation to take up alternative ways. There were, however, more effective ways of restraining such motivation in Japan, especially in the form of the controls on the individual independent of his family structure. The remarkable thing about the transitional period in Japan, however, was that the new forces did not dribble into the society, being taken up by individuals here and there at their own wills. The process shows numerous signs of being carefully controlled and even planned from the very start. The actual opening of Japan that was forced by Perry was not of course a part of Japanese operations, but it was not totally unexpected, and its possible significance for the future of Japan was grasped at once. The closure of Japan was one of the techniques by which the Tokugawa hoped to hold back change and incidentally to forestall changes brought about by foreign contacts raising the possibility of foreign allies for rebellious nobles—a possibility that might have broken the rather thorough system of control devised by the Shogunate. But all through the period of closure the Tokugawa kept a window to the West in the carefully restricted Dutch trading concession. This was so restricted as to offer the Dutch no uncontrolled basis for influencing the people at large as existed in China even before the Opium Wars forced more contacts to be made available. One of the exactions placed on the Dutch was a periodic report on what transpired in the Western world. Scholars today may laugh at the naïveté of some of the ideas of the West held by the Japanese in power in those days, but the fact remains that they knew a great deal more about the West than the West knew about Japan. They were particularly impressed by the apparent ease and avidity with which the Western powers took over control of those parts of the world that lacked even the beginnings of industrialization and yet were strategic for it in terms of raw materials, markets, transportation, etc. The manner of Perry's appearance in Japan was to many of the Japanese a sign that their time had come unless they moved to prevent it.

They certainly moved to prevent it. How far back in Japanese social structure one could trace an authentic and intense desire to maintain "national" integrity is probably not known. But the devotion of the leaders, at least, to rule of Japan by Japanese was certainly intense in the middle of the nineteenth century, and apparently had been so for centuries past. The Japanese who seized control from the Tokugawa were determined to prevent the domination of Japan by outside forces. In the period between Perry's appearance and the restoration of the Emperor, the power of the West was studied in Japan, and Japanese went abroad to see for themselves. They were given conclusive evidence by the West of the importance of armies and fleets in these matters in a series of incidents in which victory went inevitably to the West.

The graft, corruption, and decay of the Tokugawa made it a relatively simple matter for a determined group backed by some of the major daimio to "overthrow" the Shogun and restore the Emperor. In fact the Shogun himself seems almost to have co-operated in the transition. All through the Shogunate the fiction had been preserved that the Shogun was simply the representative of the Emperor—that the Emperor was too honorific to be bothered with the day-to-day affairs of state. In the crisis that presented itself the reigning Shogun in fact voluntarily turned over his power to the Emperor. Such bloodshed as had featured the reign of the previous Shogun was conducted in defiance of the Shogun but had posed either as being directed against the chief minister of the Shogun or as undertaken out of loyalty to the Emperor, whose court had been permitted to gain increasing power toward the end of the Shogunate. The new regime that took over, originally as a sort of regency for the young Emperor Meiji, a boy of fifteen at the time, had a window dressing of nobles from eminent families, but the actual executives of the new order were a group of young samurai who had been in administrative positions in the various powerful daimiates and who had been in close contact with the merchants. The merchants themselves by this time through their alliance with the samurai had become powers in many of these administrations and in some cases had apparently even held offices as chamberlains and the like. They had not, however, lost their merchant roles, because their income-earning capacities were sorely needed and caused them to be valuable to the upper classes, with whom they became allied.

Reforms followed the Restoration of the Emperor (formally dated as 1868) quickly. The men in power understood that an army and fleet of the modern sort were necessary if Japan were to escape absorption. A conscript army of peasants was organized and trained—a radical departure for Japan, in which the right to bear arms was the prerogative par excellence of the upper classes. Despite skepticism this army quickly demonstrated its effectiveness by the defeat of the Satsuma rebellion, the last gasp of the old feudal system. The samurai fighters of the Satsuma were easily defeated by this conscript army organized and recruited in the

Western fashion. The Satsuma had from their point of view revolted from motives of loyalty, and after their defeat they became immediate and substantial supporters of the new regime. The leaders of the revolt even became heroes of a sort in modern Japan by virtue of the fact that their motivation by loyalty was accented even though their loyalty was misguided in the view of the modern rulers of Japan.

The new rulers understood that a modern army and fleet were minimal requirements if Japan was to escape foreign domination. They also realized that a modern heavy industry was necessary if Japan was to be able to support a modern military establishment without dependence upon foreign powers. They understood even more. They understood that one of the major avenues of encroachment by the modern Western nations in other underdeveloped countries had been via the protection of their investments in those areas. The new rulers of Japan early faced up to the problem of building up these necessary industrial facilities without resort to financing from abroad with all the footholds that sort of a relationship offered to foreign governments. The problem posed for them by this point of view was a serious one. In the first place the scale on which these industries had to be set up precluded the easy transformation of capital from prevailing forms to the modern ones. In the second place the Japanese had initially at least to seek their capital equipment abroad, since they lacked the means of making it at home. Finally, and perhaps most difficult of all, the sort of heavy industry necessary to serve as a basis for the independent maintenance of a modern army and fleet was uneconomic in Japan. Because of the relative lack of good coal and iron deposits in Japan proper, it was cheaper for Japan to buy heavy industrial goods abroad than to produce them at home. But buying them abroad would make and would keep Japan more and more vulnerable to the interests of her foreign sources of supply of these commodities. National interest from the point of view of the Japanese required the subsidization of those industries at any cost. The maintenance of a modern army and fleet was another economic strain on Japan. Armies and fleets may be justified on many grounds, but they are always net drains on the effective material productivity for other uses of any country. Economically they are never justified save by a consideration of the spoils of conquest that they may make possible or by a consideration of the costs of the conquests they prevent. It was the prevention of conquest by outsiders that initially at least motivated the money and effort spent on army and fleet in Japan.

The Japanese feat came as close to being one of lifting oneself by one's bootstraps as the modern world has ever seen. They started close to bankruptcy, used almost no foreign capital, established uneconomic heavy industries, organized and maintained a modern military and naval establishment, changed their governmental system radically, altered their system of production and consumption of goods and services to one in which modern industry was strategic, erected and conducted many highly

profitable modern enterprises, made literacy of a sort virtually universal, and taught their people to operate effectively in terms of types of relationships that had been relatively unimportant and unknown in the Tokugawa period. They did it all with virtually no internal bloodshed or disintegration of major proportions, and they were very far along with the job in no more than five decades. The problems they posed themselves required even tighter controls on the process than industrialization would have in another context in which the utilization of loans and other help from abroad would not have been excluded or in which natural resources furnished a better material basis for industrialization than they did in Japan.

A start could be made and was made by the export of raw silk and specie, but this could not carry the burden for long. To accomplish their aim Japan's leaders had to find a special sort of manufacture or service. As a latecomer to industrialization Japan could use what the world had already learned. She could start with the most modern machines available without the burden of obsolete machinery that still carried capital obligations; she could start without unnecessary capital expenditures to cover the developmental process; she could use the latest managerial techniques; and she had a source of labor that was abundant and very cheap. These advantages were necessary because out of those industries in which Japan had a comparative advantage the Japanese had to make enough not only to pay for those and for further development, but also to pay for those industries that had to be subsidized and for the military establishment. The lack of raw materials at home meant that Japan had to look for products that satisfied the following list of conditions: (1) the cost of raw materials and their transport plus the cost of transport of the finished goods to the markets would be small relative to the total value of the finished goods, (2) a great deal of the value of the finished goods could be added in fabrication, (3) large amounts of labor could be utilized in the manufacture of the goods, (4) the product would be largely produced for export, and (5) preferably other countries producing it for export would have large amounts of obsolete equipment and relatively high labor costs. Textiles were goods of this sort par excellence, and many other light manufactured goods fell into this category. The Japanese judiciously combined some modern manufacture with a system of domestic industry to produce certain goods that could not be produced on a domestic-industry basis in the West because of labor rates and were not adapted to or did not justify economically large-scale machine production. Shipping was a service industry in which the Japanese could have similar conditions. In the pursuit of development in those fields the Japanese were assiduous and successful, for they had unusual comparative advantages. But these comparative advantages depended in considerable part on tight co-ordination and control. For example, sale or use of manufactured goods within Japan proper as opposed to their production for

export had to be very carefully controlled and had above all to wait until the net productivity of Japanese workers had risen by more than the cost of the new goods they were here permitted to buy. One of the major advantages that Japan had in international trade was that the standard of living in Japan was different and cheaper than that of the Western world, and hence Japanese labor costs were much lower. Consumption of the goods produced at home that did not wait on increases in net productivity would have wiped out that advantage. That advantage had to be kept large because some of it had to be wiped out to support the uneconomic heavy industries and the military establishment. This in turn posed a special problem of control. In their production roles Japanese had to be taught as rapidly as possible to use Western techniques, and this had to be done with those of their consumption roles that were directly reflected in increases in net productivity. But for the rest the total advantage of the society, as conceived by those in control, lay in retaining as many as possible of the features of the "Japanese way" that involved a standard of living different from and cheaper than that of the West. It is not a matter of chance that so many items showing Western standards of living and Western domestic habits were expunged from movies, literature, and the like and put in the category of "dangerous thoughts" along with such things as plots against the state, etc.

The transition had to be kept smooth. The Japanese were well aware that civil strife was a well understood fishing ground for foreign nations. Their own expulsion of Europeans some centuries before had been intimately tied up with the participation of these Europeans in Japanese domestic struggles for power. The Japanese also had China as a constant warning to them. China had all the obvious possibilities for industrialization that Japan had plus very much better raw material resources and even cheaper labor. But China lacked the ability to organize and maintain tightly a planned program for industrialization, and most of the things Japan's leaders feared for Japan happened to China. In fact, Japan herself in her initial tests of her progress was an outstanding participant in the exploitation of China's weakness.

One of the first problems faced by the new regime was reform that would secure the allegiance of the peasants for certain by improving their lot if possible, and another was to place at the disposal of those who could make effective modern use of it those capital resources that did exist and were not marshaled in such hands already. Both reforms involved the feudal lords and the land; wealth not in the form of land was pretty much already in the hands of the merchants. The way out was ingenious. The lands were taken over and turned over to the peasants by the national government. The feudal landholders were compensated with government securities. But these were matters that only the bankers really understood, and the new bankers were the old merchants who acquired thereby effective control for purposes of financial manipulation of virtually the

entire finances of the society. There was hardly any opposition from the former nobles. Those who were already closely allied with the merchants went over into modern business and industrial roles. Some of the able ones went into professional roles, and some went into the government. But these adaptations were on the basis of germane abilities for the most part; when these were lacking, they lived out their lives on what income was left to them from their government bonds. Some of the samurai went into the armed forces, more perhaps into the navy than into the army, but again they had to have germane abilities. The armed forces, particularly the army, early instituted a radical system of promotion on the basis of merit and became a major ladder for social ascent in the new nation. Wryly enough, many of the samurai found positions as policemen, in which roles in the early days at least they could continue to wear their swords. They retained some small measure of authority (under orders, of course) over common people, and their patiently acquired talents could be put to use without too much or too arduous conversion. For many of those nobles the material sacrifices involved were tremendous, but the code of the warriors even in the days of decay had always emphasized the preparation for sacrifice. The new rulers used this habituation. The samurai policemen, however poor, could fulfil the samurai obligations by proper performance in these new roles for their masters.

In the transformation of Japan to a relatively highly industrialized society, particularly given the importance of speed in that conversion, the merchants might have been expected to give the maximum amount of trouble as far as the problem of control was concerned. They formed the group on whom the feudal emphasis of loyalty was least impressed. They were strategic for the conversion because they had some of the skills and attitudes necessary for the changes. They caused little or no trouble, however, for whatever they may have lacked in orientation to higher authorities was made up by the fact that even if they placed their interests as individuals above those of Japan as a unit, they were motivated to seek the same things. They were cut loose by the new regime to do what they were accustomed to doing with relatively slight restrictions. There had to be a place for the heavy industries, and there had to be an orientation to production for export. But there were state subsidies to aid these motivations; there was the fact that the leaders among the merchants were prime movers in the governmental organization itself; and there was the fact that the government measures prevented foreigners from competing with these to their own disadvantage. The new nobility was created, and while there were places in it for many of the more eminent carry-overs from the old nobility, there was a method of continual appointment of new nobles on the basis of achievements useful to the state. The new businessmen and industrialists were prominent among the new nobles. The control was facilitated by another aspect of the situation at the end of the Tokugawa regime. There existed at that time a considerable concen-

tration of wealth and power among the merchants in a few merchant families. This carried over to the new situation particularly when the capital resources of the old feudal nobility were converted out of land and into modern financial forms which gravitated through the banks into the control of the large merchant families who owned the banks. Whatever the social evils may be that are involved in a highly monopolistic situation like that of the zaibatsu, it offers certain advantages in a situation that requires a considerable amount of highly general planning. From the start the control of the key industries was in the hands of a rather restricted group, and the tightness of interstitial relations in a modern economic system means that control of the key industries gives enough leverage if necessary for control of the less strategic industries that are dependent upon the key industries.

But the question of control of determined deviants among the new businessmen and industrialists does not seem to have been seriously raised in the early part of the transition. It is not until the second or third decade of the twentieth century that any element of the society whose interests showed any marked divergence from those of the business and industrial interests came to power in the government. When this did occur, as evidenced in the political struggles for power between the military and the zaibatsu, the struggles were relatively peaceful. There were, it is true, some assassinations of business and industrial figures, but there was no chaotic struggle for power or general resort to arms inside Japan. There was a seesaw political struggle for a time with eventual victory for the military extremists, but despite a difference in their interests the military did not experience any marked difficulty in control of the zaibatsu. Whatever emancipation from the feudal emphasis on loyalty the merchants may have had at the end of the Tokugawa regime, they like everyone else in the society had undergone an intensive and well-conceived program of indoctrination in serving the national interest that dated from the Restoration in 1868. The situation was further complicated in these respects by virtue of the fact that defiance of the military, if successful, would probably have been a Pyrrhic victory for the zaibatsu, but exploration of this matter is beside the point here. In any case there is good reason to believe that the one group that was, perhaps, not well conditioned to stay in line on the basis of an overwhelming concern with loyalty was a group whose members were motivated by other factors to seek exactly the things sought by the rulers of the new Japan among whom the members of this same group were, of course, prominent.

The Resultant Stage

There is not space or need here to describe in detail what was done in the modernization of Japan. The changes were revolutionary as far as the social structure of the society was concerned, and industrialization of a marked degree, far beyond anyone's expectations in the West, was achieved

in a very short time. It is perhaps doubtful that any other society ever carried out such marked changes so quickly with so little violence. Land tenure, education, production and consumption systems, political systems—virtually everything—either changed or had its position in the total social structure changed radically. And yet some things were held remarkably constant, though this in itself was a sort of change because those things held constant now existed in a quite different context. The new forces in Japan undercut many of the old patterns just as they had in China, but they did not simultaneously undercut the sole or the major source of control over individuals as they did in China. The Japanese were even able to retard the disintegration of the old type of family system to some extent. By continual emphasis on the “Japanese way” they were able to get individuals to adapt quickly the new ways in spheres in which they were essential and retain the old, at least long enough for a more gradual transition, in other spheres of life. They were not able to prevent a gradual drift toward a more Western and expensive standard of living, but they were able to keep the drift gradual so that the wiping out of their cost differential in certain fields of export was not capricious from the point of view of the economy as a whole. The Japanese paid a price for their tightly controlled change. There is much reason to believe that, in the world context in which they developed, the aggressive international policy that brought about their defeat was intimately related to the very factors that permitted their rapid and smooth transition to an industrialized state. A definite case can be made out for the proposition that in the international environment in which they existed their success at home was bound to get them involved in a failure abroad that would threaten to undo the effects of much of their social engineering. But here we are concerned with the factors that permit of rapid industrialization, and the lesson we may learn from the comparison of the Chinese and Japanese experience consists first of some of the conditions under which modernization may be carried out or facilitated and second of what may be done to offset the difficulties that were attendant on Japanese success in these respects. Japan was able to do the first of these. She was not able to avoid the second.

In the deliberately oversimplified analysis presented here the comparative lesson may be summed up briefly. The new forces in both cases were identical, and it may be added that they will be roughly the same in the case of the modernization of any of the so-called “underdeveloped areas,” except for the fact that both the advantages and the disadvantages for latecomers to the process have now been intensified by more than half a century of further development. The basis from which change took place was quite different in the two cases, though both were similar in many respects, especially in their emphasis on highly self-sufficient economic units, relationship requirements different from those accentuated by modern industry and the importance of the family system as a major focus of attention in the organization of the society. They differed in two respects

that were crucial for industrialization if the hypotheses presented here are tenable. In the first place, for all the fact that both societies were a world apart from the structures necessary for a modern industrialized nation, Japan had in the basis from which its change took place patterns that made possible the tight maintenance of control over the vast majority of her individuals even while or after the process of industrialization undercut many of the old structures that figured prominently in control or motivation of deviant activities. China's "traditional" social structure was such that the advent of the new forces undercut virtually the only possibility of such control, and the old system was not, as in Japan, able to maintain its forces until a comparatively sudden end so that the new forces could be prevented from dribbling in uncontrolled. The transition in China was not such that a planned introduction of selected aspects of the new forces could be made even temporarily, as in Japan. In the second place, there existed in Japan a group of people with roles such that the individuals holding them were relatively readily adaptable to some of the roles strategic for the transition. This was true despite the fact that prior to the transition these roles were by no means identical with those that were strategic for the transition. Although China had similar roles in her "traditional" social structure, they differed from those in Japan particularly with regard to the manner in which the holders of those roles were fitted into the total social structure, and the difference was apparently sufficient when combined with other aspects of that situation to preclude the ready adaptation of the persons involved in them to the new roles necessary for a transition like that carried out in Japan.

If the hypotheses presented in this deliberately oversimplified picture of strategic, necessary, but not sufficient factors in the relatively rapid accomplishment of modernization in Japan as contrasted with China's inability to accomplish a similar result have any validity, they indicate the importance for such a problem of what may superficially seem to be small differences in social structure indeed. They would also seem to indicate that for these purposes in these two cases factors such as inanimate resources, climate, population size, the forces introduced from outside, etc., when considered apart from the social structures of the societies concerned, do not contain the necessary but not sufficient conditions to explain the differential result. It is by no means true that all the cases of industrialization or modernization of so-called "backward" areas will present identical or nearly identical problems to those that arose in China and Japan. But there are likely to be some common features. The new forces remain similar in kind, but as time passes they progressively accentuate the problems of conversion from a relatively nonindustrial to a relatively industrial form.¹⁰ The advantages and disadvantages that accrue to the late-comers

¹⁰ In the sense of the term used here conversion to a relatively industrial form does not necessarily mean preoccupation of the economic aspects of the system with either light or heavy manufactures. Predominantly agrarian or commercial systems

in the process continue to increase, or so it would seem at least. This continues to accent the importance of a technique of control over the actions of individuals in societies making the conversion. The problem is aggravated by the fact that the new patterns are certain to undercut many of the measures of social control characteristic of relatively nonindustrialized societies, particularly those that are dependent on relationships that accent traditional ways of doing things—who a person is rather than what he can do that is germane to his jobs, and vaguely delimited relationships. Furthermore whether the conversion is to be carried out on a predominantly private-enterprise basis or a governmentally controlled basis, administrative talent of a remarkably similar sort is a minimum requirement. In the absence of a group relatively easily converted for these purposes as in the case of Japan, one must be trained. On the balance it is probably doubtful that many of the so-called “backward” areas have a group that is relatively speaking so easily convertible for these purposes as were the merchants in Japan. Finally, another special aspect of control related to both the general need for control cited above and the need for a specialized form of talent must be mentioned. If the conversion is to be successful in the sense of being smooth and rapid, there must be patterns in the society that neutralize at least the possibility of interference from members of those groups that cannot be readily converted for the new purposes. Such patterns have been conspicuously absent in the case of China so far.

There are numerous other problems that must be taken into consideration in the full discussion of these problems of conversion. The “demographic problem” is perhaps the most obvious of these. In general these have not been touched on here because in the particular cases presented here they could be considered both constant for the two cases or not strategic for them. There is no reason to believe that this will be the case with other societies.

Finally, this paper has emphasized the importance of social patterns that facilitate a continuance or institution of tight centralized controls for rapid progress toward industrialization. I believe that to be a sound emphasis in this case, but one must not infer from this more than is stated. It by no means follows that high degrees of industrialization achieved in

may become highly industrialized, and one of the characteristic problems of this sort of conversion is that relatively nonindustrialized parts of the society are made interdependent with or even completely dependent upon the more industrialized portions of the society long before they are themselves converted in any obvious and direct sense easily appreciated by the persons involved. When this happens, it is very likely both to retard the development of industrialization in some respects and hasten the disintegration of the patterns characteristic of the nonindustrialized portions of the society. But in any case the persons concerned are then involved in industrialization, and so far at least, the change has continued to run in the direction of industrialization and not the reverse. The future may hold a change in these respects, but so far the patterns of highly industrialized societies have shown themselves to be remarkably close to a universal social solvent.

a manner such as that of Japan are stable in the long run. There is some reason at least to raise the question as to whether any highly industrialized society is not most precariously balanced as a social system. Even apart from this general question, however, those late-comers to industrialization that have carried it far and fast on a highly controlled basis show some signs that may be interpreted as indicative of even greater instability than seems general in those societies that acquired industrialization slowly over an extended period of development. Japan, Germany, and Russia are the only late-comers who have been conspicuously successful at industrialization. No late-comer has yet gotten far with the process by the slow, gradual development route, and indeed the stage of industrialization reached elsewhere may already preclude that route for others. It may well be that the lessons we shall learn from the comparative analysis of the problems of industrialization will have implications for social engineering in an unexpected quarter. They may get us further in the stable maintenance of these societies already having achieved it than in the rapid, easy, and efficient transformation of the societies whose members either appear to "need" it or desire it or both.

The State and Economic Enterprise in Modern Japan, 1868-1938*

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NO ISSUE is more crucial to Asia's economic future today than how to allocate the function of initiative and entrepreneurial responsibility in programs of national economic development. For complex, interlocking changes in technology and economic structure are required to lift a country's productive powers substantially above the traditional levels of the peasant village. Such changes are not produced by impersonal forces which, once set in motion, advance under their own momentum towards some predestined goal. Their impulse must come from dynamic leadership supported by the ambitions and energies of masses of people. They entail myriads of human decisions. And, if they develop at all, they require a new framework of social values and organization which entails a radical break with the past, led by elements in the society who will reject the sanctity of old ways and understand the social prerequisites of industrialization.

This problem of releasing creative energies within a new social framework inevitably raises basic issues concerning the role to be played by the state. The state is the supreme social grouping armed with a monopoly of coercive power. Or in Asia it is in process of achieving that power. Its role can therefore be decisive. But it can be decisive in either a positive or negative sense—by the things it does, or the things it refrains from doing. It may be a support to economic growth; it may be a drag. Certainly it will greatly influence the rate and direction of economic change.

Watching the experiments now going on in Asia, one is impressed with a certain dilemma. In one form or another it appears in every country. On the one hand, the option of free enterprise and private ownership, which has largely prevailed in the West, fails to provide in Asia an accept-

* Adapted from the author's *The Economic Development of Japan* (Princeton, 1954), chap. x, with the permission of the Princeton University Press. Certain passages from this paper were also incorporated in a brief essay entitled "The State and Economic Growth of Japan," *Far Eastern Survey*, XX (May 16, 1951), 93-99.

able pattern of organization for economic advance. The social and environmental circumstances of the West which made it a great engine of material progress over two hundred years are largely absent in the East. Moreover everyone is in a hurry. On the other hand, the problem is not necessarily solved by turning over the major tasks of economic development to the state. For if the traditions of private enterprise among Eastern peoples offer only a weak foundation, this is hardly less true of the traditions of Oriental bureaucracy, as carried over into the political institutions of modern Asia. To pose the issue in the form of mutually exclusive alternatives is unrealistic, of course. More practically the problem for each nation, in its own context, is to determine the strategic responsibilities which the state must shoulder, and to contrive that they be handled in such a way as to give real substance to the growth process through opportunities and incentives offered increasing numbers of people in the private sector of economic life.

The experience of the Japanese in this regard is of more than passing interest. Less than a century ago they too were a tradition-bound peasant people only on the threshold of modernization. Poor in natural resources, feudal in political tradition, and long isolated from the West, their rise to the industrial leadership of Asia would hardly have been forecast by any contemporary observer. Yet the seventy years following the Meiji "Renovation" witnessed a growth of productive powers in Japan scarcely surpassed in the annals of the West. From poverty and seclusion she emerged to become one of the chief trading and industrial nations of the world. Her population doubled, yet managed to support itself at a slowly rising standard of material well-being. At the same time it produced a sufficient "surplus" to enable her to become—for a time—the foremost military and naval power of the Far East.

By any standard this was a remarkable technical performance. It is curious, therefore, that more attention has not been paid to the Japanese case in all the recent analysis and planning of economic development among her neighbors. For this there may be two reasons. First, the literature on modern Japan has tended to stress the militaristic and exploitive aspects of Japanese industrialism. This has discouraged study of its more constructive features. Second, Japan is often regarded as *sui generis*, so different in social heritage and environment from other Far Eastern countries as to make difficult any transfer of lessons.

There is substance in both these points. But they can be exaggerated. Japan was dramatically successful in tackling the basic factor in Asiatic poverty: low productivity per worker. Many of the problems she surmounted in doing so are typical of those faced by every people when they embark on the process. Some of the mistakes she made threaten to be repeated elsewhere. With all its peculiarities, the experience of Japan in most respects is more relevant to the problem of industrializing other regions of East Asia than that of any Western country.

In proceeding here to examine the role of the state in Japanese economic development, it may be well to make three limiting definitions of the topic.

First, this discussion is confined mainly to actions and attitudes expressed through the formal machinery of government. Only in conclusion does it touch on the broader issue as to who controlled the state, or the degree to which the political framework was part of a larger social mechanism by which the dominant groups in Japan imposed their will on the nation.

Second, it is concerned almost entirely with the policies of the national regime, with the recognition that this fails, at best, to take due account of elements of paternalism and control exercised informally but pervasively by local authorities in the towns and countryside.

Third, it concerns especially the influence of state policies on the growth of real national income per capita in Japan, rather than other values and consequences involved in industrialization, or other objects of national policy, however important.

It is readily apparent that these restrictions exclude many aspects of the topic given in the title of this paper. Even for those discussed here, no one could regard the treatment as definitive, least of all the author. The subject is a complex one, elusive in its ultimate ramifications. It has thus far been little studied with the tools of modern social science. Moreover, the attempt to weigh various policies and actions, specifically with reference to their influence on the growth of national income, involves one necessarily in broad judgments hardly subject to quantitative proof. They are bound to be colored by preconceptions and biases, giving rise to differing interpretations of the facts.

THE FRAMEWORK OF INDUSTRIALIZATION

The Meiji State

The leaders of Meiji Japan, once authority was concentrated around the throne, proceeded with great energy and skill to lay the foundations for industrial development. A coalition of bureaucratic and mercantile interests, with the former in the ascendancy, they were urgently concerned to strengthen the new regime against pressing dangers, both external and internal. The bombardments of Shimonoseki and Kagoshima by American and British warships in 1862-63 had been a grim reminder of Japan's weakness in facing the West. The opposition of dissident clan leaders after 1868, as well as latent peasant unrest, argued no less cogently for a strong Army as a counterrevolutionary force at home. "Like Nehemiah," says E. Herbert Norman, "they had to build with sword in one hand and trowel in the other."

These Meiji bureaucrats were strongly mercantilistic in philosophy. They sought to expand national power as the end of state policy, while keeping a firm grip themselves on the levers of control. Just as the Mercantilists of seventeenth-century Europe drew on the precepts of economic

policy fashioned earlier in towns and smaller territorial states, so Japan's post-Restoration statesmen applied on a national scale many of the practices developed earlier in Tokugawa days by the more enterprising territorial clans. Military strength and prestige remained, of course, in the forefront of their objectives. It was here they sought most eagerly the secrets of the West. Accordingly, they and their successors did not hesitate to sacrifice economic interests in the cause of state-building. The "center of gravity," in Schmoller's phrase, now became the nation-state, occupied with consolidating its forces at home and preparing to enter the arena of competitive struggle abroad.

In the main, however, like their European counterparts, the builders of modern Japan seem to have regarded the pursuit of wealth and power as co-ordinate objectives, each reinforcing the other. *Fukoku kyōhei* was their slogan—"a rich country; a strong army." No doubt they often failed to realize points of contradiction between the two. Especially in later decades a clear choice had to be faced, as the logic of industrial development, sustained by world-wide trade, ran counter to the military ideal of a self-contained Empire. But at the outset, there was a good deal of sense in the general proposition. Industrialization would provide the sinews of military defense and centralized political control. Conversely, a powerful state could nurture economic development at home. In foreign relations it would assure political independence and perhaps win other gains in the form of colonies, overseas markets, and investment opportunities.

This reasoning served to make industrialization a major concern of state policy. Equally, it gave a pronounced bias in favor of power as distinguished from welfare objectives, wherever a conflict arose between the two.

Fortunately for the nation, nevertheless, the Meiji leaders conceived of their economic problem in broad terms. With remarkable perception, they seem to have realized from the beginning that industrialization is more than a matter of importing machinery and technical skills to be grafted into a society otherwise basically unchanged. To be sure, theirs was to be a revolution from the top, preserving the existing power structure in its essentials. It revealed little solicitude for the small peasant or the young factory hand; it was frankly antidemocratic in philosophy. Nevertheless, it was to work a real transformation in Japanese society.

Its architects proceeded at once to demolish the archaic structure of the Tokugawa state. In its place they set about erecting a modern framework of law, political administration, and national defense. They saw that a revolution in transport, communications, and finance was required no less for economic development than for military power. And in general, unlike the contemporary rulers of Manchu China, they led in the movement to replace the classical learning with Western science and industrial arts. Most surprisingly, perhaps, they began very early to lay

the foundations for a system of universal primary education, taking care to insure that it would preserve and even strengthen the ancient core of authoritarian ideals symbolized in the Throne.

Japan thus embarked on the path of economic modernization with a centralized government which within a decade was seated firmly and aggressively in the saddle. Several other broad characteristics of this political regime were significant for the economic policies to be pursued.

First, the country succeeded in preserving its sovereign independence—perhaps by a narrow margin. It had to accept the restriction of its import tariff to nominal rates, as well as the humiliation of extraterritoriality, until the unequal treaties of 1858 were terminated in 1899. For some years, too, the government was too weak to feel entirely secure at home, much less to make its writ run abroad. In contrast to most of Asia at this juncture, however, Japan was ruled by Japanese, with little qualification. Its ports, its industries, its currency and banks were Japanese-controlled. Mindful of what was happening elsewhere, the Japanese even discouraged foreign business enterprise within the country. (Western business showed little disposition to enter in any case.) They likewise made little effort to borrow abroad until after the victorious war with China. One cardinal circumstance, then, was that economic policy from the beginning was largely free of outside interference. It was nationalist in spirit and control.

Second, the Meiji oligarchy soon outwitted and dispersed all latent elements of serious opposition within Japan. It quickly mustered sufficient force to quell incipient peasant revolt, on the one hand, and samurai rebellion on the other. If it warded off anything like the regime of foreign settlements and concessions in China, it also experienced nothing resembling the warlord period. As a unitary regime in a relatively small area with easy internal communications it was likewise spared many of the problems inherent in countries larger in scale and less authoritarian in tradition.

Almost at once liberal parties arose to attack its policies and to clamor for a share in government. These, too, it kept largely within bounds by police action, bribery, and occasional concessions like the Constitution of 1889. Through the Meiji era the government remained an authoritarian, bureaucratic regime, presiding over a nation displaying marked cohesion and discipline, and with a Parliament (after 1890) capable of little more than obstructionist tactics. Within the limits of its resources, therefore, it was comparatively free to drive forward towards the goals of national development as conceived by its leaders. Behind-the-scenes struggles among elements of the ruling coalition were constantly in evidence, and sometimes overt clashes. But they were accommodated without radical changes in the structure of power, immediately by a judicious sharing of the spoils of office, and ultimately by invoking when necessary the prestige of the throne to silence dissident groups. Only after World War I were the state's targets blurred and its energies distracted by the appearance of new political forces and problems created by industrialism.

Third, the general dedication of economic policies to the building of national power has already been noted. As rapidly as the instruments of government action could be forged through the training and organization of a new bureaucracy, they seem to have been directed fairly consistently to such ends. At the same time the regime never seems to have acquired delusions of its own omniscience or omnipotence in the economic realm. There were often confusion and hasty improvisation in deciding upon the actual course of action to be adopted in pursuit of the general goal. The experiments with state pioneering of industry, with banking institutions, with railway financing and other ventures, all show much trial-and-error through the nineteenth century. Probably this reflected a good deal of pulling and hauling within the government and its supporting groups. The samurai-bureaucrat and the merchant inherited authoritarian traditions of clan mercantilism and guild responsibility. On the other hand, they were visibly impressed by the liberal principles current in the West, or at any rate by the power and efficiency that accompanied them. They were eager to demonstrate Japan's modernity. In military affairs, administration, finance, and education the Japanese borrowed widely, and at first inconsistently. Rather quickly, however, they seem to have rejected the uncongenial and adapted the rest to their own circumstances and propensities.

Pioneering of Industry

Initially, the state itself spearheaded the industrialization process by pioneering and financing new undertakings over a broad front. In the decade after 1868 it built and operated railways and telegraph lines. It opened new coal mines and agricultural experiment stations. It established iron foundries, shipyards, and machine shops. It imported foreign equipment and experts to mechanize silk-reeling and cotton-spinning. It set up model factories to manufacture cement, paper, and glass. Many new Western-style industries thus owed their start to government initiative. The state shouldered the early risks, pioneered technical advance, and patronized many private ventures which followed on its heels.

This phase of direct entrepreneurship passed rather quickly, however. In most industries it never went beyond the pilot stage. After 1882 the government relinquished its lead. Private capital and experience were beginning to accumulate; also the regime itself wished to conserve its resources for an ambitious program of naval expansion then being undertaken. To share responsibility increasingly with private interests appeared to offer no threat to the political oligarchy, or its national aims. The example of the West in the nineteenth century argued its merits. Most of the state's industrial properties were soon disposed of at prices low enough to attract ready buyers. They went mostly to big capitalists enjoying official favor and capable of financing and operating them. The result was to endow the nascent zaibatsu with fresh opportunities to extend

their activities. It consolidated still further the pattern of business oligarchy, in close association with the government, which characterized large-scale industry and finance from the earliest days.

Subsequently state capitalism in the sense of public ownership played a declining role in prewar Japan until its revival in the war economy of the late thirties. In 1896 the government established the Yawata Iron Works, largely for military reasons. This outstanding industrial enterprise continued to dominate the steel industry. In 1906 the state also nationalized the trunk railways of the country—by far its largest operating investment. Soon it became the biggest stockholder in the South Manchuria Railway, which was taken over from Russia as a prize of war and made the chief instrument of Japanese enterprise in Manchuria. At home it also retained possession of the telephones and telegraphs, of much of the forest domain, and of a few other miscellaneous undertakings mostly serving the special requirements of the Army and Navy. More important, it exercised wide powers over the banking system through legal control of the great quasi-official banks. Yet from 1885 to 1935 government ownership in Japan went little beyond what was then regarded in most industrial countries as the conventional sphere of public responsibility.

It was only with the outbreak of Sino-Japanese hostilities in 1937 that the state began extensively to invest and directly intervene in the control of industrial enterprise. In rapid succession scores of "national policy companies" were organized to expand the productive capacity of Japan and the overseas territories, particularly in war essentials. By the end of 1938 the Finance Ministry held shares in a dozen trading and industrial companies aggregating a billion yen. However, aside from the steel industry these holdings were still chiefly in the S.M.R. and other semiofficial concerns formed to exploit the resources of Manchuria and North China. Even now the stimulation and control of Japan's war economy in its first phase was achieved less by direct public financing than by legislation giving the government sweeping control over private industry and trade.

Education

More significant than state ownership in prewar Japan was the whole range of influences brought to bear through governmental action on the growth and direction of private enterprise after 1868. Already emphasized was the creation of a national framework of unity and security, with its supporting structure of law, administration, transport, currency, and the like. Beyond this were various policies more selective in their intent and their effects. Naturally they reflected the aims and philosophy of those interest groups which were dominant in Japanese society. Though stamped with a strong emphasis on national power, they tended to vary with the shifting outlook and relative power position of the military, the civil bureaucracy, the political parties, and private business. They took effect through activities so varied in character as to be difficult to sum up in any

consistent formula. They ranged all the way from routine business services like crop-reporting, navigation aids, and patent protection to programs of financial and technical assistance amounting to virtual partnership with private interests in certain key industries.

Of pervasive importance for industrialization was one other sphere of public policy deserving mention at the outset. This was the attitude of the state towards education.

In traditional Japan formal learning had been largely the monopoly of the samurai. The only form of technical training was the apprentice system. The problem of modernization was first to establish a broad highway of contact with Western learning; and second to adapt and develop it on an indigenous basis. The government led in both tasks. It dispatched group missions and individual students in large numbers abroad to study Western science, administration, and the industrial arts. It hired hundreds of Western experts in almost every branch of technical skills from silkworm breeding to shipping and central banking. A Department of Education was created in 1871. Drawing on French models, it blue-printed a national system of education, with a primary school envisaged for every six hundred children. Higher technical schools were organized in such fields as medicine, military science, navigation, agriculture, commerce, and fisheries. Tokyo Imperial University was developed as the training school for the civil service, and the leading center of university education and research.

Interestingly enough, some of the early Japanese educators were strongly influenced by American ideas of democracy and utilitarianism in education. Soon, however, the Meiji bureaucrats took alarm at this tendency. In the eighties official policy turned towards an increasing emphasis on nationalistic and authoritarian morals. As expounded in the Imperial Rescript on Education (1890), this philosophy of subservience to the state became firmly rooted in the curriculum. Cloaked in the trappings of Japanese mythology, it was revived and reached new heights during the recrudescence of blood-and-iron militarism after 1931. The Japanese are not the only people to use state education to enforce social discipline within the established order, but they were pioneers in the more modern techniques of this form of regimentation.

It was remarkable, nevertheless, that Japan should move so quickly away from the philosophy of the Tokugawa ruling class, which was to keep the people steeped in ignorance, to a national campaign against illiteracy. The interests of class and religion placed their stamp upon the curriculum; yet they no longer blocked the road to popular enlightenment, as in so many countries of Asia and the West.¹ By the turn of the century

¹ It is sometimes forgotten how long the modernization and extension of education was delayed, even in Britain, by class interest and religious rivalry. Japan lacked the force of a great religious movement like the nonconformist movement to back the struggle towards this goal under state auspices. On the other hand, she was

substantial progress had been made towards a compulsory system of four-year (later six-year) primary education. Already 5 million children were receiving some rudiments of instruction at least in 27,000 elementary schools. On this foundation was erected a tapering pyramid of technical and general education, at both secondary and higher levels. The latter was restricted in practice largely to boys from upper-income groups. Still there were now 15,000 students in 49 colleges and universities.

In Japan, as in most countries, only the state found it advantageous to finance technical education on any scale. Along with the rest of the system of public education it was constantly handicapped, so far as national government expenditure was concerned, by the priority given to military budgets. By 1903, nevertheless, some 240 technical schools of higher and lower grades had been organized. There were, in addition, the technical colleges of the universities, and 1,000 elementary "continuation schools" for part-time instruction in the simpler skills required for industry, commerce, agriculture, and fishing.

With all its limitations, both in scale and content, this system of general and technical education as it expanded was fundamental to Japan's industrial advance. It produced a growing body of technicians whose achievements in pure and applied science came to command the respect of the world. Most of the people got no more than six years' schooling; it was meager at best. Yet even this helped to diffuse the more modest technical skills widely among the population, especially in the towns and cities. And education encouraged an increasing degree of geographic, occupational, and social mobility among the people which was essential to the radical restructuring of the economy. Finally, it was the chief force at work, however ineffectively, to combat the great inequalities so deeply rooted in Japanese society. No other enterprise of the state paid more handsome dividends to the nation. The chief trouble was there was not enough.

A full assessment of the role of government in Japanese economic life would also take account of policies of inaction as well as action. It was highly significant that the Meiji governments showed little disposition to employ the powers of the state to redistribute income and wealth, to combat the concentration of control in finance and industry, or to shelter the peasant and worker from the rigors of competition. In the main, except for the diffusion of knowledge, their policies served rather to tip the scales the other way. No less significant was the attitude of the authorities towards the relentless growth of population. Government bureaus and scientific institutions made considerable contributions to the advances in

spared the handicap of a powerful established church which elsewhere has so commonly fought any encroachment on its monopoly of "voluntary education" while failing to provide adequate facilities itself. Not until 1876 was attendance at school made compulsory for children up to twelve in England, and not until 1890 was elementary education made generally available at public expense.

public health which steadily reduced the death rate. Birth control, however, was a subject on which Japan's political leaders were at least neutral and often frankly hostile. The practice of family limitation spread slowly through the cities in the later decades, but its open advocacy remained under legal penalties.

To discuss all aspects of public policy in the economic realm would carry us far beyond the bounds of this paper. Several major features may be singled out for more extended treatment, however, because of their broad effect on the whole industrialization process.

MONEY, CREDIT, AND FISCAL POLICIES

Early Financial Expedients

One crucial problem in Meiji Japan, as in all countries undertaking economic development, was to mobilize savings out of a mass of small incomes, by one means or another, and to generate a flow of investment into new forms of productive enterprise. Although government investment was itself a small part of the total, the whole process of capital formation was inevitably influenced by the state at almost every point.²

Various circumstances in Japan appear to have made for a rate of savings relatively high for a country in the early stages of development. One factor was the gross inequality in the distribution of income. Another was the resistance of traditional values to higher standards of material consumption, which was perhaps more marked than in most other Asiatic countries. Yet if capital accumulation far outdistanced anything known in Tokugawa Japan, the new circumstance was not either of these factors so much as the new incentives and opportunities to use wealth in productive ways rather than to hoard or consume it.

A rising tempo of investment followed almost automatically from the new impulses and techniques which flowed into Japan, once she abandoned seclusion, threw off the old shackles on freedom of enterprise, and embarked on a new era of political unity, legal security, and technical advance. This process, however, required a steady growth of currency and credit to keep pace with the growth of production and its shift to a commercial basis. It called for new financial mechanisms to create and mobilize liquid purchasing power for private investment as well as state expenditure. And it could be accelerated by employing these mechanisms to inflate prices and profit expectations so as to draw increasing resources into capital formation.

The turbulent financial history of 1868 to 1881 reveals these processes at work. Only by large issues of paper money could the Meiji regime initially meet its requirements. As quickly as possible, however, it sought a more orderly solution. The land-tax reform of 1873 created a stable system of national revenue collected mainly from the agricultural class.

² The subject of capital formation in prewar Japan is treated at greater length in *The Economic Development of Japan*, chap. v.

Meanwhile, to augment the supply of liquid funds for public and private use, the authorities also encouraged the spread of joint-stock finance and private banking and note issue. The borrowing powers of the government were first employed on a large scale in the attempt to resolve the political problem of the displaced samurai by a mixture of conciliation and force. Over 200 million yen of public bonds were issued in commutation of feudal pensions of 400,000 families. Some of these bonds were used by the nobility to found note-issuing banks, which led to a rapid increase in the supply of credit. Others afforded capital directly for small enterprises of all sorts that mushroomed in the inflation which followed.

These early financial expedients are difficult to assess in their effects on real-capital formation. Initially, in all likelihood, the result was not so much to create new wealth as to redistribute spending on consumption from one class to another, and to concentrate the ownership of land and other existing assets. The government managed at any rate to meet its own most urgent political and administrative requirements through a critical period. At the same time, sizable pools of banking capital were created under the control of private financiers who began to seek outlets for their funds in new forms of large-scale enterprise. And a dynamic impulse was given to countless small undertakings in agriculture, commerce, and handicraft industry, some of which survived the deflation and depression of the eighties.

Most important, experience taught the need for a system of currency and banking which would be more ample and more stable than the early improvisations. This experience, together with further study of European practice, formed the basis for the far-reaching reforms undertaken by Count Matsukata after 1880. The Bank of Japan was now developed as a central bank of note issue and fiscal agent of the government. Other semiofficial banks were founded on government initiative to enlarge the credit system. They also served to extend the range of government control over the network of private banks which was growing apace. In a series of steps the currency was unified; the banking system was placed under a greater measure of Treasury supervision; and in 1897 Japan followed the example of most other countries in abandoning bi-metallism after a long and unsatisfactory experience. She now adopted the gold standard, with the help of the huge sterling indemnity exacted from China as the price of defeat in 1895. Western money markets were henceforth open to Japanese public borrowing, and large foreign loans were contracted during the next fifteen years. Her own banking system, although still inadequate in many respects, provided a fairly effective instrument for the development of modern industry and trade.

The Special Banks

The key role played by the great quasi-public banks formed in the later Meiji years deserves special emphasis. Besides the Bank of Japan,

they included particularly the Yokohama Specie Bank, the Industrial Bank of Japan, the Hypothec Bank of Japan, and the Banks of Chosen and Taiwan. These institutions functioned side by side, and often in close collaboration with the private banks, particularly the traditional Big Five—the First (Daiichi), Mitsui, Mitsubishi, Sumitomo, and Wasuda. Together they made for a powerful concentration of banking capital, and one which increased with the passage of time, as hundreds of smaller banks were gradually absorbed by the big private institutions in a series of financial crises. The importance of the government banks is indicated by the fact that their paid-up capital and reserves ranged between a fifth and a third of that of all special and ordinary (nonsavings) banks in Japan after 1900.

The state itself provided very little of the share capital of the special banks (although the Imperial Household was a large stockholder in several). They secured their funds from private subscription to shares, from private deposits and debenture issues, and from public accounts. In each institution, however, the government appointed or approved the principal officers and directors. Under their statutes and bylaws their policies were also subject to continuous scrutiny and control by the Ministry of Finance. Another concentration of financial resources even more directly under the control of the Ministry of Finance was the huge fund of postal savings managed by its Deposits Bureau. Through its relationship to these institutions, as well as its participation in various "national policy companies" like the South Manchuria Railway and Oriental Development Company, the state was in a position to exert a large influence over the investment of private funds when it chose to do so. This was the more true since no wide public market for securities ever developed. Banks characteristically engaged in long- as well as short-term financing of industry, agriculture, and real estate. Their relationship with operating industries were thus unusually close, as in Germany.

The official banks served diverse purposes. One major function was to channel private savings into financing the government itself. They always held a major share of the public debt. The Bank of Japan, of course, performed the usual functions of a central bank. The Yokohama Specie Bank gave the country an efficient foreign-exchange institution with branches all over the world. The Industrial Bank was a mortgage as well as banking institution, which raised funds abroad as well as at home. The Hypothec Bank became the center of a network of agriculture banks and credit co-operatives which grew to supply as much as a quarter of farm credit in the later years. The Industrial and Hypothec Banks were used increasingly in industrial financing during the thirties as all sorts of "national policy companies" were floated to promote war industries. By 1939 government banks and agencies together held as much as 20 per cent of all industrial debentures outstanding in Japan.

In the realm of imperialist expansion and colonial development, several

of the public banks were employed directly as instruments of national policy. Here severe financial losses to the government and depositors sometimes occurred. The Banks of Taiwan and Chosen played a major part in the development of their respective territories. They conducted banking and currency operations for the Army and colonial governments, besides financing business enterprise. "Development" is a euphemism for some of their activities. The Taiwan bank in particular had a long record of speculation and mismanagement culminating in its collapse in 1927. The Bank of Chosen and Industrial Bank were also associated with it in a series of political maneuvers and financial manipulations in China. In 1915-18, for example, they were the tool of Premier General Terauchi and the Japanese militarists in the unsavory Nishihara loans to corrupt Chinese politicians. These loans were soon defaulted and the Japanese government had to acknowledge its responsibility by paying off the creditors to the tune of 156 million yen. Again after 1931 the special banks were freely employed as instruments of imperialism on the continent. The Bank of Chosen served as fiscal agent for the Kwantung Army. It also financed a series of puppet regimes and companies in China. It was even so versatile as to engage in large-scale smuggling of silver and textiles in the Tientsin area where the Japanese were trying to break down Chinese administrative authority in 1935/36.

These continental ventures form a colorful chapter in the history of the colonial banks. But they had little to do with Japanese economic development, except to dissipate resources. The more constructive contributions of the special banks lay elsewhere.

Secular Expansion of Credit

To return to matters of more substantive importance for Japan's economic growth, the fiscal operations of the government as well as its banking policies continued to provide an inflationary stimulus even after the Matsukata reforms previously mentioned. Following the retrenchment of the eighties, government borrowing and spending were kept within more manageable bounds. Yet a steady rise in the public debt and note issue persisted over most of the next thirty years.

It is interesting that Japanese price indices show only three or four years between 1868 and 1900 when wholesale commodity prices failed to rise from the level of the preceding year. Again from 1900 to 1920 only three such years are recorded.³ The upward drift of prices after

³ The long secular rise in the Japanese price level was interrupted only briefly in the eighties, and again between 1920 and 1932. The general tendency, apart from year-to-year fluctuations, is illustrated by the table below. This gives the Bank of Japan's annual index of wholesale prices for 56 commodities in Tokyo from 1900 to 1938, summarized in 5-year averages, and extended back to 1870 by an index of 15 commodity prices taken from Asahi Shimbun-sha, *Nippon Keizai Tōkei Shōkan* (Tokyo, 1930), p. 1108.

the turn of the century characterized the whole world economy, to be sure. But in Japan it was reinforced by two factors. One was a chronic deficit in the government budget occasioned largely by the wars with China and Russia. The other was a general predilection for easy money. This seems to have been shared alike by the government and the business community, and helped to maintain private investment at a high level through much of the period 1893-1913. The competing demands of government spending and private investment imposed a severe strain on the country's resources, and especially on the balance of payments. Accordingly, the government now borrowed heavily abroad. Between 1896 and 1913 almost two billion yen of foreign loans were floated, mostly on government credit. They tided the country through a critical period of military and industrial expansion. Just as this expedient played out came the windfall opportunities of World War I. Financially the war rescued Japan from an approaching impasse, and generated a new wave of trading and industrial expansion.

The collapse of 1920 ushered in a decade of financial disorders. Again the tendency was to stave off any radical deflationary readjustment. Government funds were used freely to shore up the credit structure and to meet the yawning gap in the balance of payments. This time the difficulty was more serious, and the remedy proved inadequate. It was succeeded by a brief trial of retrenchment and deflation, preparatory to a return to the gold standard. But this experiment, too, was ill-fated, as it was attempted on the eve of a world depression. So once more recourse was had in the early thirties to mild doses of inflation, accompanied for the first time by drastic exchange depreciation. For another decade almost the civilian economy resumed its rapid growth. The growth in national income was less impressive than the growth in national product, however, owing to the deterioration of the terms of trade caused by the depreciation of the yen.⁴

To explore the financial history of prewar Japan at any length, of course, would introduce many complexities into this oversimplified outline. It may be sufficient, nevertheless, to draw attention to one essential

WHOLESALE COMMODITY PRICES IN JAPAN
(1910-14=100)

1870-74.	45	1895-99.	70	1920-24.	221
1875-79.	48	1900-1904.	79	1925-29.	185
1880-84.	48	1905-09.	96	1930-34.	134
1885-89.	47	1910-14.	100	1935-38.	171
1890-94.	54	1915-19.	164		

⁴The short-run gains from this experience in exchange depreciation and monetary reflation were nevertheless substantial, especially in view of the drastic readjustment which had to be made to the decline of the American silk market. The real difficulties came later, as foreign governments moved to protect their markets against cheap Japanese goods; and still more when the Japanese military refused to call a halt to military spending, and even assassinated the Finance Minister, prudent old Korekiyo Takahashi, to get him out of the way.

feature of the growth of Japanese capitalism. The State continually drained large resources into armament and war. Certainly it failed to channel the flow of investment funds into many uses which would have had a high priority in terms of social welfare. But it did manage to provide, partly through design and partly through inadvertence, a monetary stimulus and mechanism by which large sums of purchasing power were placed in the hands of industrialists, merchants, and farmers, able and willing to invest them in wealth-creating activities on a growing scale.

The secular expansion of currency and credit in prewar Japan was a rather disorderly process, to be sure. It was attended with the usual booms and depressions of a capitalistic economy. Some were induced by monetary mismanagement at home. Others grew out of external developments beyond Japan's control. Over the period as a whole, however, depressions were usually short-lived in prewar Japan. And after the early paper-money experiences, runaway tendencies in boom periods which did not parallel similar price and income movements abroad tended to be held in check by difficulties which they invited in the balance of payments. All in all, it would seem that Japan took over fairly successfully the intricate modern techniques of money and credit, where the responsibility of the state is so great. This is applying the standard, not of perfection, but of common experience at the time. In the main, Japanese governments refrained before 1937 from reckless abuse of their power to create credit. No less important, they avoided excessive regard for orthodox canons of "sound finance."

The underlying process of growth was a long tidal wave of technical innovation, as Japan took over and exploited the technology and trading opportunities opened up by contact with the West. New wants, new markets, new forms of production and organization were the impelling force.

Largely they were private and civilian in character, but the expansion in this realm was reinforced by continual government spending for armaments, which was especially significant in building the heavy industries. All this required a growing supply of new investment funds, renewed in cycle after cycle. In the field of money and credit, public policy helped to supply this need by a persistent bias in favor of monetary expansion.

At the same time certain other consequences arising from the predilection for easy money should not pass unnoticed. One was the social cost of arbitrary redistributions of income occasioned by changes in the price level. The secular upward drift—a threefold increase from 1868 to 1938—meant that periodically great masses of people saw the buying power of their current incomes whittled away through price inflation generated by new investment and armament expenditure which was not matched by a corresponding increase in current output. This was part of the real cost of Japanese economic development. It was the mechanism by which a share of the capital was created. But even where it helped

eventually to build the country's productive power, the future benefits were not shared among classes in proportion to the immediate deprivations.

Another consequence of the tendency to inflation, and the lax credit standards which invited it, was a chronic waste of capital resources. If it made funds available for wealth-creating activities, it also diverted them all too easily into speculation and ill-conceived investment. It likewise relaxed the incentives otherwise present for technological improvements. The experience of the Japanese, no less than other peoples, shows that a degree of adversity impels a businessman to efficiency gains more often than easy profits on a rising market. For example, the depression of 1881-85 put through the wringer many an enterprise which had mushroomed in the inflation of the seventies. Those that managed to survive grew in maturity and efficiency as a result. Again after 1926 the pressure of falling prices compelled various Japanese industries to make sweeping improvements in their managerial and technical operations. These gains explain in no small measure Japan's competitive success in world markets during the thirties. Such periods were uncommon, however. Japanese businessmen and their bankers were apt to prefer the featherbed of cheap credit to the spur of sagging profit margins. They contrived through most of the prewar decades to have their way.

Taxation and Business Enterprise

Among the early Meiji reforms none were more important for economic development than those which reorganized and extended the public revenue. Taxes on commercial and industrial enterprise now acquired a degree of regularity and predictability unknown in pre-Restoration Japan. Probably they were also lightened in the aggregate. In any case, arbitrary levies at the will of an arrogant political aristocracy became a thing of the past.

Initially, and for a generation or more, it was the peasant who continued to bear the main load, as he had under the *ancien regime*. The Land Tax Reform of 1873, in effect, replaced the feudal dues he had previously borne with a money tax based on the assessed value of land. For twenty-five years this tax provided the national government with its chief source of revenue. Local surtaxes on land, together with a house tax, were also the chief source of prefectural and village income. Taxes on real estate actually furnished over half of all national and local revenue down to the turn of the century.

In 1882 an ambitious program to build an Imperial Navy was laid down. Arms expenditure rose almost uninterruptedly for the next thirty years as Japan passed successfully through the wars with China and Russia. While borrowing heavily to finance its outlays, the central government was forced to cast about for other sources of current revenue. Surprisingly, as early as 1887 the Japanese imported from the West the idea of a personal income tax. But the rate did not exceed 3 per cent even

on incomes over 30,000 yen; its yield proved negligible. In 1896 the authorities added a general tax on business turnover and capital, and in 1905 even a modest inheritance tax. In 1899 they also stiffened the income tax somewhat, applying it for the first time to company income. At the insistence of the wealthy House of Peers, however, bond interest and company profits were still exempted from the progressive rates of the personal income tax. They were taxed at only 2.0 and 2.5 per cent respectively. Even then evasions were widespread. None of the early taxes on business income and property, excepting real estate, was heavy enough to yield much revenue. As late as 1913 they provided less than 15 per cent of national tax collections.

The shift after 1893 in the structure of taxation, both national and local, is indicated broadly in the following table:

TABLE XVIII.
TAX REVENUE BY KIND AND SOURCE, 1893-1934*

KIND AND SOURCE	1893-94		1913-14		1933-34	
	Mill. yen	Per cent	Mill. yen	Per cent	Mill. yen	Per cent
Total tax revenue	105	100.0	660	100.0	1,567	100.0
National (inc. fiscal monopoly profits)	(72)	—	(470)	—	(1,002)	—
Prefectural, municipal, town, and village	(35)	—	(190)	—	(566)	—
Taxes on real estate†	66	61.4	131	19.8	282	18.0
Taxes on consumption‡	22	20.4	210	31.9	493	31.5
Taxes on income, capital, business enterprises§	14	13.3	245	37.1	678	43.3
Customs duties	5	4.8	74	11.2	114	7.3

*Data from Tōyō Keizai Shimpō-sha, *Meiji Taishō Zaisei Shōran* (Tokyo, 1927); Department of Finance, *Financial and Economic Annual of Japan*, and Bank of Japan, *Economic Statistics of Japan*, *passim*. The distribution by types of taxes is only approximate.

†National and local land taxes, plus local house taxes.

‡Chiefly national excise taxes on liquor, tobacco and soy in 1893; and in 1913 and 1933 national taxes on liquor, sugar, and textiles and net revenue in the General Budget from national fiscal monopolies on tobacco and salt. The tobacco, salt, and camphor monopolies yielded net revenue of 60 million yen in 1913 and 179 million yen in 1933. Certain minor taxes on consumption goods are excluded here, as well as all customs duties.

§Taxes on personal, business, and household income; the national succession tax; registration fees and stamp duties; and miscellaneous taxes on business enterprise in various fields. In aggregate yield these taxes were almost equally divided between national and local taxes in 1913 and 1933. National taxes in this category totalled 4 million yen in 1893; 111 million in 1913; and 336 million in 1933.

It was indirect taxes on consumer goods which largely financed the growing requirements of the national budget from 1880 to 1913. They took two forms: (a) excise taxes on sake, sugar, soy, textiles, and a few other items; and (b) lucrative fiscal monopolies applied in 1898 and 1904 on the sale of two widely used products—tobacco and salt. If it is assumed that one half of customs duties were also collected on imports of consumer goods, consumer taxes provided the bulk of national tax revenues over and above the land tax. In 1893 their share was 79 per cent; and

in 1913, 63 per cent. Meanwhile local taxes had also grown apace, to pay for mounting outlays on education and public works. Prefectural and municipal governments financed themselves with a hodge-podge of levies. Some of them were surtaxes on national land, income, and business taxes. Others were of a local variety. As the central government shifted increasingly to taxation of urban business enterprise, local land and household taxes bore with especial weight on the rural population.

The incidence of this entire Meiji system of taxes, national and local, on savings and consumption is conjectural. In view of the nature and wide dispersion of taxes, however, they must have come out of consumption in considerable degree, and from slender margins of income which would otherwise have been saved by small farmers and petty businessmen.

The currents of Japanese liberalism and democracy which reached their full tide in the decade after World War I naturally wrought certain changes in fiscal policy. With armament-spending cut back from its wartime levels, the government displayed more willingness to appropriate funds for agricultural relief and other social expenditure. For example, it spent considerable sums after 1921 in the effort to stabilize the price of rice through buying and selling operations. It assumed new responsibilities for public health, sanitation, labor exchanges, etc. It also effected minor revisions in the tax system designed to lighten somewhat the burden on small incomes.

Yet, when it came to public expenditures, the Diets of this period displayed less interest in relieving agricultural distress or urban poverty than in appropriating huge funds to support the capital structure of the big banks and industrial concerns. The latter, of course, were closely affiliated with the political parties. This helped them to secure generous assistance from the public Treasury in time of financial stress. Tinkering with the tax structure likewise effected no basic change in social policy. It is significant that indirect taxes continued to supply 40 per cent or more of the total national revenue, if monopoly profits on tobacco and salt are included. They weighed most heavily on the wage and salaried classes of the cities. In fact, so far as the city worker was concerned, they now offset the earlier discrimination against the farmer through the system of direct taxation.⁵ The small or medium-size business proprietor was still at an advantage, however. A 1929 study showed that his direct taxes were still only half as high in relation to his income as those of the farmer in the same income bracket. This was about the same differential as had prevailed twenty years earlier.

Large personal and corporate incomes continued to be subject to only mildly progressive levies. After World War I the income tax came to provide as much as 20 per cent of national tax revenue. Under the revised

⁵ Hiroye Ouchi, "Tax Burden on Salaried Men and Farmers as Revealed by the Official Survey of Their Livings," *Bulletin de l'Institut International de Statistique*, XXV, Part 2 (Tokyo, 1931), 372-392.

law of 1920, in fact, rates were raised as high as 36 per cent on incomes over 4 million yen. But virtually all interest, and 40 per cent of corporate dividends and bonuses, were still immune from the progressive rates of the personal income tax. Interest (except the yield on national and savings bonds, which was entirely exempt) was separately taxed at only 4-5 per cent. Applied to corporate profits, the basic rate was only 5 per cent. Surtaxes on excess profits raised it no higher than 10 per cent even when a firm made 30 per cent on its invested capital. Moreover, loopholes and evasions were widespread, as a result of lax enforcement and fictitious bookkeeping. Whatever the legal rates, the taxes paid by Japanese corporations and well-to-do individuals have always depended in no small degree on a process of individual negotiation, in which political influence and financial bargaining power carry a good deal of weight.

As late as 1933 all national taxes on personal income, business profits, and interest still yielded little more than the liquor tax alone (209 million yen). They provided less than half as much as all excise taxes plus fiscal monopoly revenue. Meanwhile, real estate and household taxes continued to be widely borne by the population; consumption taxes were heavily regressive; and various local and national taxes on business activity of various kinds had a broad incidence upon millions of small industrialists, tradesmen, and professional people. It was Jean-Baptiste Colbert, something of an expert in fiscal matters, who once remarked that "the art of taxation consists in plucking the largest amount of feathers with the least possible amount of hissing."

Looking back over the period as a whole, one may conclude that the over-all burden of taxation on the Japanese economy was kept at fairly moderate levels. Through the interwar period it ranged between 10 per cent and 15 per cent of the national income. Earlier it may have been higher, though probably not very much so. This ratio compared favorably with that prevailing in the United States at the time. It was well below that in many European countries. But it was kept at this level only by rigid economy in nonmilitary expenditure. It still represented a much heavier burden in reality for a people as poor as the Japanese, especially in view of the meager civilian services which they got in return.

The power to tax and spend was never used liberally by prewar Japanese governments as an engine for the more equitable distribution of wealth. As in most countries, the tax structure grew by adding layer on layer of miscellaneous imposts, with the development of new needs and potential sources of revenue. In the first decades, to repeat, the agriculturist carried the burden. Around the turn of the century this was shifted in increasing degree to the general public through consumption taxes. Only following World War I did corporate enterprise assume a major share of the load. After forty years of industrial progress the distribution of Japanese tax income was taking on the pattern shared by

most industrial nations. Even then, large property incomes continued to receive lenient treatment both in law and administration, particularly if they were derived from nonagricultural pursuits. Not until the tax reform of 1940, forced by the exigencies of war, was the whole system overhauled and the income tax put to work as a more effective revenue instrument.

In fairness, one further observation should be made. A major obstacle to the national development of many Asiatic countries today is the refusal of their well-to-do, propertied classes who hold political power either to pay taxes or to venture large savings in new enterprise. Japan's prewar fiscal system, like her distribution of wealth and income, was highly undemocratic, judged by the standard of modern times. Tax evasion was also fairly systematic and widespread. Yet, just as the well-to-do class contributed aggressively to capital formation, so it was led by a mixture of coercion and consent to provide increasingly for the revenue requirements of the state.

Many circumstances enter into such national differences. Clearly one of the most important was that modern Japan did not carry over into post-Restoration times a class of wealthy land-owning families with an interest mainly in perpetuating the *status quo*, and the power to do so. The very significance of the Restoration was that the keys to power passed largely to bureaucratic and mercantile interests with quite other purposes and capacities. A look at the problem of economic development elsewhere only confirms the belief that in taxation as in other matters this fact was crucial for Japan's subsequent economic growth.⁶

ECONOMIC FOREIGN POLICY

The search for economic opportunity abroad was another broad area of state initiative and action. In its widest sense this includes all governmental policies directly affecting the movement of goods, technique, capital, or persons across the national frontiers. In Japan as in all nations such

⁶ Little has been said here of another aspect of fiscal policy: tax discrimination and subsidy to encourage particular undertakings. See *The Economic Development of Japan*.

The early Meiji governments resorted rather extensively to such direct aids, especially as they were barred by treaty from tariff protection. After the turn of the century, however, direct subsidies and grants were only sparingly employed. Mainly they were for public works, railways and shipping, and for technical encouragements in metallurgy and machine-building. (Beginning in 1921 considerable sums were also devoted to none too successful attempts to stabilize the price of rice.) More significant for the strategic industries were the preferential buying policies of government agencies, and official influence on the lending policies of the special banks. Tax immunities were also occasionally granted, usually for a limited period of years. The protection tariff system was pervasively discriminatory, of course. But the really important feature of tax policy for general industrial growth was the provision of a broad system of taxes which was fairly certain and impersonal in its administration—by Oriental standards—and which sought to minimize the deterrents to large-scale capital accumulation and business enterprise.

activities linking the national economy with the outside world were a special concern of the state. For her these concerns were heightened by unusual dependence upon imports of technology, food, and raw materials; and also by the political insecurities of an island nation and the imperial ambitions of her rulers.

To review systematically all aspects of economic foreign policy would entail a rather laborious exposition. Instead, this section is focused mainly on foreign trade and tariff policies, shipping aids, and the significance of the overseas empire in Japan's economic growth.

It should be observed that this leaves out other elements of importance. First, the mechanisms relating Japan's financial system with world money markets were obviously a principal feature of the institutional framework of international economic contacts, where the government exercised wide managerial responsibilities. Brief reference has been made in the foregoing section to Japanese credit expansion in relation to the balance of payments, but with no attempt at systematic treatment. Second, state initiative in the import and diffusion of the industrial arts from the West was equally strategic during the early years and deserves further emphasis. Third, government policies affected significantly the migration of capital and labor into and out of Japan Proper. The two principal chapters in such migration are dealt with in other papers of this volume. Mr. Reubens discusses the import of capital particularly from 1897 to 1913, with the attendant balance of payments problems. Mrs. Tacuber deals with the export of skilled labor to the expanding overseas empire, as one phase of Japan's demographic experience during the interwar years.

Trade and Multilateralism

In the realm of overseas trade the state from the beginning gave active assistance to Japanese businessmen in search of trading opportunities.

In part this took the conventional forms of export promotion wherever markets could be found for the growing range of Japanese manufactures. Foreign experts and the participation of foreign merchants and shipping companies were welcomed in the early, formative years. The government itself took an active hand in the study and development of foreign-trade techniques, in exhibiting Japanese products abroad at expositions, and in the formation of chambers of commerce and commodity guilds for co-operative activity in this field. It also provided indispensable facilities. It created bureaus to inspect and certify the quality of export goods like tea and *habutae* silk. It established the Yokohama Specie Bank in 1880, and developed it as the chief source of funds for financing Japanese trade. It handed out generous subsidies year after year to develop and modernize the Japanese merchant marine as an important support to commercial as well as military expansion. And it proceeded, almost at once, to begin the conquest of a colonial empire within which Japanese businessmen were given more or less exclusive privileges to trade and investment.

Yet in this whole realm of economic foreign policy the most important contribution of the state to Japan's industrial growth was a negative one, in a sense. First by compulsion but later by voluntary decision, the Japanese government long adhered to the principle of multilateral, nondiscriminatory trade in her foreign (non-Empire) commerce.

This system of commerce between states was of peculiar value to Japan. Fortunately it prevailed generally through the world during the first half century of her industrialization. As her industries grew she soon became heavily dependent on materials and equipment purchased all over the globe, and paid for likewise by exports to both Asia and the West. Credit surpluses in one region financed deficits in another.⁷ She was able thus to buy in the cheapest markets and to sell wherever the best price was available. Her trade was somewhat limited by tariffs, her own included. But it was comparatively free of national discrimination and almost entirely unhampered by quantitative controls before 1933.

During the first thirty years of modernization, the principle of multilateralism and most-favored-nation treatment were forced upon Japan, in any case, by the treaties dictated by the foreign powers in 1858. After winning her tariff freedom in 1899 she continued to adhere to it (except for the preferential position given her own colonies, and certain conventional tariff rates still bound by commercial treaties). In return she enjoyed corresponding advantages throughout most of the trading world. Only after 1933 did she begin to deviate importantly from this principle in dealings with foreign countries. Partly, of course, she was forced into bilateral bargaining and trade regulation by the spread of import quotas, import-licensing, and tariff discrimination against Japanese goods all over the world. It was Japan herself, however, who contributed much to the revival of nationalism and violence which broke down the international economic order. The flooding of certain markets with cheap Japanese wares, after the yen fell from 49 cents to 30 cents, was bound to invite defensive barriers in countries ridden with depression and unemployment. Soon far greater difficulties developed as the Japanese militarists pushed ahead with their plan to conquer and develop a self-contained "Co-prosperity Sphere" in Asia. Such a program of conquest—indeed the whole bloc system of trade—was the antithesis of the type of economic foreign relations which had built the Japanese economy. It led quickly to its destruction.

Quest for Empire

Long before, of course, Japan had embarked on a course of empire of which the Pacific war of 1941-45 was perhaps the inevitable outcome. As quickly as the new Meiji regime consolidated its position at home, and even before, its leaders began to experiment with force and diplomacy to extend the political frontiers of Japan. Through the military victories

⁷ See *The Economic Development of Japan*, chap. vii.

over China and Russia, combined with adroit exploitation of rivalries among the other powers, the Japanese step by step won an Empire of substantial dimensions. The growth of armament which accompanied the process, and the strategic gains which it conferred, enabled them to emerge after World War I as the predominant naval power of the Western Pacific.

Formosa, Korea, southern Sakhalin, and other lesser acquisitions were developed as sources of food and raw materials. In return for rice, sugar, fish, lumber, coal, and a few other minerals they took limited amounts of Japanese cotton goods and miscellaneous manufactures. They accounted for 10 per cent of the overseas trade of the home islands in 1911-13; and about 20 per cent in 1928-30. The Kwantung Leased Territory became the base for exploiting the coal and iron resources of Manchuria under the aegis of the semiofficial South Manchuria Railway. Later, following the seizure of the whole territory in 1931-32, a tremendous investment was poured into the area in the hope of developing a great complex of basic industries secure from the hazards of foreign embargo or military blockade. Meanwhile, in China south of the Great Wall Japanese businessmen went aggressively after trading and investment opportunities, using and being used by their government to create a politico-economic stake of growing proportions.

The quest for empire in East Asia was impelled by no single motive, except as most Japanese were indoctrinated in varying degrees with a mystical faith in the Imperial Destiny. As usual in the folklore of imperialism, so intertwined were considerations of military power, economic advantage, national prestige, and "moral obligation" that even the honest testimony of the makers of Japanese policy is an unreliable guide to the facts. Political expansion drew support from various interest groups, and for differing reasons. Its momentum and direction reflected the political struggle at home, as well as the resistance it met abroad. Economic gain was clearly one of the incentives—the one most frequently cited in justification after 1905. The world had to accustom itself to steady complaints of population pressure and poverty in resources in apology for blatant encroachments by the Japanese on their neighbors.

Here was an area of state action, then, in which few opportunities were let slip. It is significant that the propensity to military expansion appeared as early as the seventies. This was long before large-scale industrialization had created any extensive need for Asiatic markets or materials. Yet Japanese businessmen, while more prudent than their military compatriots and more realistic about the economics of imperialism, were quick to exploit if not to create the opportunities which came their way. They were the more responsive when their government was prepared to underwrite the risk, as was not infrequently the case. Economic imperialism thus became the handmaid of military aggression.

It was only after 1931, with the conquest of Manchuria, that the Empire began to assume a major place in the total sphere of Japanese

economic enterprise. The subject territories now acquired increasing prominence as an area of Japanese investment, trade, and white-collar employment. The focus of this overseas development was, of course, the new state of Manchukuo. The Kwantung Army took the initiative. Ambitious programs were set in motion to develop railways and ports; coal, iron, and light metals; hydroelectric resources, farm lands, and forests. Before the "Incident" Japanese investment in Manchuria was valued at 1,700 million yen, half of it in the securities of the South Manchuria Railway Company and its subsidiaries. This sum doubled during the next seven years, reaching 3,600 million yen at the end of 1938.⁸

Meanwhile the Empire served as an expanding job frontier, especially for white-collar workers. It attracted hundreds of thousands of Japanese males into civilian employment overseas, not to mention the soldiers required to garrison it and prepare for its further extension. The grandiose scheme of the Overseas Ministry to colonize Manchuria with a million Japanese families never got beyond the experimental stage. By 1938, however, the Japanese population resident in all the overseas territories numbered almost two million people, of whom 600,000 had flocked to Manchuria.⁹ Most of them were in business and professional pursuits.

Japan's external trade likewise reflected the boom in Empire areas. Korea, Formosa, and Manchuria absorbed 37 per cent of her exports from 1933 to 1937. Largely they were cotton textiles, foodstuffs, chemicals, paper, and miscellaneous consumer wares. For the first time an important export outlet was also provided for Japanese iron and steel products, machinery, and electrical goods through construction activity in these areas. Wherever political domination was secured, Japanese industrialists and traders automatically won a preferential position. Shipping companies enjoyed a virtual monopoly of intra-Empire trade. Even where political control was less than complete, *force majeure* might be employed to seize commercial or investment opportunities, as in the brazen, organized smuggling which went on in North China during 1933-37 under the euphemism of "special trade."

Some 29 per cent of Japan's imports of goods was likewise furnished by Korea, Manchuria, and Formosa in the mid-thirties. The colonies had long been the chief source of her food imports, on which she now depended for almost a quarter of her entire food supply.¹⁰ Most important,

⁸ Japan's debtor-creditor position at this time, and the changes taking place in earlier decades, are outlined more fully in *The Economic Development of Japan*, chap. v.

⁹ Imperial Cabinet, Bureau of Statistics, *Nippon Teikoku Tōkei Nenkan*, no. 58 (Tokyo, 1939), pp. 6-7, 60-61.

¹⁰ In brown-rice equivalent (U. S. Department of State, *Japan's Food, Beverage and Tobacco Position*, Washington, 1948, Tables 1-3). For a brief summary of Japan's prewar dependence on overseas food and raw materials, see *The Economic Development of Japan*, chap. vii.

the Empire furnished 15-20 per cent of her total domestic and imported supply of rice; 75 per cent of her sugar; and 12 per cent of her fats and oils (mainly Korean fish oils and Manchurian beans). Here she also got 12 per cent of her iron and steel supplies (Fe content), and 10 per cent of her coal, including large amounts of coking coal. Karafuto was the source of about one-fifth of her lumber and pulpwood. The list could be extended to include useful amounts of salt, phosphates, nonferrous metals, and a hundred other items.

The truth is, however, that despite industrious efforts Japan was never able to satisfy from Empire sources, even including Manchuria, her chief overseas requirements for textile fibers, metals, petroleum, and fertilizers. In 1936 all the dependent areas together furnished no more than 15 per cent of her total imports of industrial materials. And they supplied as much sugar and rice as they did only because the Japanese government imposed discriminatory tariffs on purchases elsewhere. This is not to deny the natural wealth of these regions. Nor can it be questioned that the opportunity afforded by conquest enabled Japanese enterprise to develop these resources and tie them into the economy of the home islands on a scale that would otherwise have been impossible. The real economic issue, aside from moral considerations, is whether the gains were commensurate with the political risks and financial outlays which were the overhead of this pattern of overseas development.

Any such balance sheet of the economic gains and losses to Japan from imperial expansion is virtually impossible to construct. This is true even of the more modest Empire with which her Army and Navy was forced to content itself before 1931. Still more is it true of Manchuria and the war in China. The bare facts of Japanese trade, investment, and employment in the colonies tell little of the real impact of political imperialism on her economic growth. Much investment and trade in the Empire was beneficial economically to both the Japanese and the indigenous peoples. But some of it would have grown up anyway. And a good deal of it clearly represented a diversion of resources from more profitable channels through state subsidy, preferential tariffs, and coercion. Probably equivalent supplies of Japanese-type rice could not have been developed elsewhere on as favorable terms; perhaps the same is true of coal, lumber, fish, and other products. The calculation of benefit would depend on how much of the over-all cost of the colonial establishment one threw into the balance. Certainly Japan's major trading stake lay in multilateral world trade. Her *economic* interest argued for combating the rise of economic nationalism, not contributing to its spread.

Following armed conquest, of course, rich assets in the form of mines, railroads, factories, and trading opportunities could be gained by outright seizure. The Japanese are not the only people to show that this can sometimes be a lucrative business even in the complex world of modern industry. But how balance such short-term gains against the prolonged

military effort involved in winning an empire? Or the losses to legitimate trade and investment which came from antagonizing first the neighboring peoples of East Asia and finally the rest of the world? If the logical outcome was to spread war and destruction through China, and then through the entire Far East, as indeed it was, then the verdict is obvious.

Such contributions as empire-building made probably consisted chiefly in the general stimulus given to industrialization by war and armament expenditure, noted earlier. But if government borrowing and spending was a catalyst of growth, it might better have been directed for this purpose along more productive lines. Mainly the Empire was a strategic rather than an economic proposition from the beginning. Probably it was so intended by those military leaders blessed with economic sophistication—were there any? One finds it difficult to see what economic gains accrued which were substantial enough to offset the costs, even if no great war had resulted in the end. Like Germany before 1914, Japan probably profited a good deal more from gaining access to the markets and materials of other colonial empires (especially the British) without having to shoulder the cost of developing and administering them.¹¹

The Manchurian adventure in particular needs closer study, even to see what its value was ultimately for Japan's war effort. Such economic gains as it brought in the meantime were probably confined largely to the fillip given Japanese heavy industry by rising state expenditure and private investment. But so far as this was desirable it could have been achieved in other and more productive ways, as remarked above. It represented in good part a tremendous effort to build a military base on the continent which would be securely under the control of the Japanese Army and would free her from dependence on foreign supplies of essential war materials. Much of the investment was questionable on economic grounds, even if Japan had managed to retain possession. As it turned out, it was lost to the last penny, along with the entire colonial stake which Japan had been seventy years in building.

This whole argument obviously rests on the premise that the Japanese were free to participate in a system of multilateral world trade, without undue fears for their national security in terms of access to overseas markets and raw materials. Such an approach may seem ingenuous today. Yet this system largely prevailed until the thirties. If it then progressively deteriorated, the Japanese could blame no one more than themselves. Actually their foreign trade expanded spectacularly until 1937. Then it was crippled more by events in Japan than elsewhere. Meanwhile the spread of restrictions abroad was an ominous portent. In view of Japan's economic needs and her military capabilities, however, her real economic

¹¹ This argument does not imply that serious dislocations would not result if long-established economic relations within the Empire were destroyed by its breakup. Events since 1945 testify to the contrary.

interest still lay in opposing the forces working in this direction, and making the best of them, not in reinforcing a tendency in the world so inimical to her future.

Tariff Protection

Much more straightforward in its effects, though also difficult to evaluate, was Japan's use of the protective tariff to foster industrialization.

Until 1899, resort to this conventional weapon was barred by the treaty agreements of 1858 and 1866 with the foreign powers. The latter agreement bound Japanese import and export duties unilaterally at very low rates for the next thirty years. The Meiji governments were thus compelled to rely more extensively than might otherwise have been the case upon direct aids to new industries in the form of low-interest loans, dividend guarantees, bounties, and technical assistance. Doubtless this practice was not without its advantages. For direct subsidies of this sort are less likely to become indiscriminate and self-perpetuating than are disguised taxes on the public in the form of price-raising duties. The sheltered industry is more apt to be required sooner or later to justify continued aid. However this may be, it is interesting that early Japanese progress along the road of industrialization was made with little tariff protection from foreign competition. Even the whole range of alternative aids extended by the government was probably modest by comparison with the tariff walls and import controls, which have become commonplace in other newly industrializing countries during more recent times.

After gaining her tariff independence in 1899 Japan embarked on a definite policy of industrial protection. Certain rates continued to be bound by convention until 1923, but general upward revisions were effected in 1911 and 1926. Tariff policy became decidedly protectionist after World War I. Except in the strong export fields—notably silk and cotton goods—most of Japan's major industries were protectionist in sentiment. Her agricultural interests became no less so, as foreign and colonial competition came into the Japanese market. Confronted with this familiar issue of agricultural protection in an industrializing economy, the government followed a middle course. It admitted increasing amounts of colonial rice and sugar, while applying high duties on foreign foodstuffs for internal consumption. Sometimes consumer groups were effective in resisting tariff increases. But this was apt to be true only where, as in the case of fertilizer materials, a well-organized body like the Imperial Agricultural Association could muster strong opposition in the Diet.

In the 1926 revision of the tariff the declared policy of the Minseito government was to grant little or no protection to scarce raw materials or to daily necessities. Yet substantial aid was accorded to industries like the wool, rayon, machinery, and chemical industries regarded as having a promising future. It was also extended to others whose outlook was more problematical. Already under the tariff law of 1924 duties of 100 per

cent had been imposed on 123 items classed as luxuries. These were consumer goods which might otherwise have been purchased abroad by the urban middle class. When the more liberal Hamaguchi Cabinet assumed power in 1929 it proposed a lowering of rates on certain industries which it termed a "drag on industrial development." This move was largely abortive. With the onset of the depression the clamor from producing interests led instead to a steep upward revision. Despite the increased protection already afforded by the depreciation of the yen in 1931/32, rates were raised on chemicals, metal manufactures, lumber, foodstuffs, and other items. A surtax of 35 per cent was also imposed on all other imports dutiable at specific rates.

Thus the 1924 and 1926 tariff schedules remained in force with upward modification through the next decade. Under the former a 100-per-cent duty was applied on about 100 luxury items. The 1926 act levied duties ranging from 5 per cent to 50 per cent on 647 classes of goods enumerated in the general tariff schedule. They ran mostly from 30 per cent to 50 per cent on such items as piece goods, copper, metal manufactures, automobiles, musical instruments, and sporting goods. On cigars, cigarettes, and cut tobacco the tariff was 35 per cent. The infant rayon industry was given a duty of 25 per cent in 1926; wheat farmers one of 40 per cent. In 1927 and again in 1932 the iron and steel industry, already sheltered by tariffs and by certain exemptions from income and business taxes, received additional aid. After 1929 duties on lumber were raised several times at the behest of lumber interests. As a rule, however, the more advanced the stage of manufacture the greater the degree of protection. For example, tariffs on refined petroleum products were applied to encourage the home refining of imported crudes.

Tariff protection was further reinforced by the practice of government agencies in "buying Japanese" whenever possible. This administrative preference for home goods, common among most governments, was especially important to various branches of the Japanese metallurgical, equipment, and chemical industries because of the prominence of government agencies as buyers of such products. It appears to have been applied consistently by the armed forces, though it did not deter them from making heavy purchases abroad where Japanese technology was markedly inferior. They themselves had a direct interest, of course, in building up domestic sources of finished munitions, equipment, and essential materials. The same policy was followed in considerable degree by the Imperial Railways and the Ministry of Communications.

An important support was thus provided to Japanese manufacturers of steel shipping, locomotives, trucks, aircraft, electrical apparatus, woolen goods, and a variety of chemicals and machinery. Government orders never accounted for a large share of the total demand for factory goods in Japan. But they were a lucrative source of business for the metal-working and metal-using trades in particular. And they exerted a con-

stant pressure towards qualitative improvements which would meet the specifications of competitive products available abroad.

The Japanese have complained bitterly, and with reason, concerning the high tariff walls erected in prewar years against Japanese manufactures abroad. The fact is that Japan herself became strongly protectionist after 1922. Her own industrial tariff now invited comparison with that of nations ordinarily regarded as highly protectionist. In 1925, even before the upward revision of 1926, Japanese rates averaged 25-30 per cent on manufactured goods. By comparison, even the "high" tariffs of Australia and the United States averaged no more than 35-40 per cent.¹² Many Japanese rates were wholly or partially ineffective, it is true, owing to the favorable position of Japanese producers in the domestic market. The main structure of Japanese industry as it developed after 1900 did not depend on government protection in large degree. However, tariffs and indirect preferences were employed to accelerate the development of a number of factory industries as they progressed through successive stages of technological maturity. Along with other governmental aids, they continued to sustain certain key industries at a level well beyond that which unrestricted foreign competition would have permitted. And high "luxury" duties, imposed originally to protect the balance of payments, served to shut out appreciable amounts of consumer goods which the Japanese public would otherwise have purchased abroad.

Tariff protection thus helped to reserve the home market largely for both the Japanese industrialist and the farmer, freeing foreign exchange resources for the purchase of machinery and industrial materials. In both fields tariffs on consumer goods weighed most directly on real wage rates in the cities. However, they probably hastened industrial capital formation in the process. They made it that much easier for Japan to industrialize rapidly with little resort to foreign borrowing, despite her heavy dependence on machinery and materials from abroad.

On balance there can be little doubt that protection in home and colonial markets helped to extend the range and diversity of Japanese manufacturing. The older industries—silk and cotton textiles, and small-scale consumer trades in great variety—needed little shelter from foreign competition over and above that provided by cultural differences and transport costs. But many newer industries requiring radical departures from traditional techniques and a large market for economical operation certainly benefited from tariff assistance, at least for a period of years. Where Japanese technology continued to lag, or the market was too small in any case, they continued to depend on government aid for survival. Other branches like the basic types of chemicals, electrical apparatus, and industrial machinery eventually reached a point of independence, particularly after the depreciation of the yen in 1931. In short, the classic "infant industry" argument

¹² League of Nations, *Tariff Level Indices* (Geneva, 1927), pp. 16-17.

found its applications, even though the Japanese Diet—like other parliaments—was motivated largely by less technical considerations.

Whether the aggregate scale of industrial output was enlarged by the tariff is more problematical. In some degree it probably was, for the reason just mentioned. But industrial protection served in part merely to shift resources from one group of industries, especially the export industries, to fields which would otherwise have been supplied by imports.

Still more difficult is it to say what contribution was made by the whole rather indiscriminate system of protection to the aggregate growth of Japanese national income, or its distribution. When the tariffs on farm products, lumber, minerals, and manufactures are all taken into account, it would appear that in good part the effect of each was canceled out by the others after 1922, except as all of them served to restrict specialization between Japan and the rest of the world. In this latter regard they came in conflict with other measures being applied concurrently by the government to expand overseas commerce and shipping. These measures have attracted a good deal more attention. Considering the whole range of trade, shipping, and colonial policies together, however, one may question whether the net effect of the state's economic foreign policies was not to curtail rather than expand overseas economic relations during the interwar period.

Shipping Subsidies

The merchant marine was a field where direct state subsidy was employed with conspicuous success to create one of the great industries of modern Japan.

An aptitude in maritime affairs came naturally to the Japanese, an island people, despite their enforced seclusion during the seventeenth and eighteenth centuries. It is remarkable, nevertheless, with what facility they took over the engineering technology and large-scale organization required for a modern merchant marine. To replace the small sailing junk with steam and steel was essential to the building of national power. From the early days, therefore, shipping and shipbuilding received the earnest attention of the Meiji authorities. Their attitude is reminiscent of the solicitude with which Britain built her merchant marine in the eighteenth century; even Adam Smith approved of the Navigation Acts.

The rise of modern Japan as a seafaring nation is a familiar story. Water transport is hardly less important for her in internal than in external commerce. The early growth of domestic trade after 1868 created an immediate demand for coastwise shipping. Even higher priority attached to the need for military transport in quelling internal disorders and embarking on foreign excursions, of which the first was the expedition to Formosa in 1874. Thereafter overseas shipping operations were steadily extended under the impetus of expanding foreign trade, the wars with China and Russia, and the unremitting patronage of the government.

Already by 1913 Japan had a steam fleet of 1.5 million tons, most of it purchased abroad. Her own shipyards were still dependent on foreign materials and machinery. Yet they had now reached the point where they could turn out 50,000 tons of vessels of over 1,000 tons a year.

World War I provided a golden opportunity for further expansion. The Japanese merchant fleet almost doubled in size, as freight rates soared to fabulous levels. After the Armistice the world-wide surplus of tonnage arose to plague the shipping business in Japan, as elsewhere. Japanese operators managed nevertheless to retain a considerable part of their newly won gains. Their increased strength now enabled them to secure a strong competitive position on certain key routes. Henceforth two-thirds of all Japan's foreign trade was carried in her own ships. Their foreign-exchange earnings helped to meet the chronic deficit in foreign-trade accounts. And of course they were the first-line auxiliary of the Imperial Navy.

In the early decades before 1915 state subventions were of particular importance to the growth of the Japanese merchant marine. Initially the Meiji governments tried a variety of expedients. They built and purchased vessels; they operated them themselves; they gave them outright or leased them to subsidized concerns like the Mitsubishi Company. By 1881 a decision appears to have been reached against government ownership, even in this strategic field. Instead, numerous small private concerns, most of them operating at a loss, were consolidated into several big companies with government backing. In 1884 the Osaka Shoshen Kaisha was formed and a year later the Nippon Yusen Kaisha. With continued guarantees and subsidies they extended shipping services from Vladivostok all the way to Bombay during the next decade. The N.Y.K. provided much of the tonnage requisitioned by the government for the war with China. With the help of over 200 foreign officers, it also operated additional ships purchased abroad by the government for the purpose.¹³ Shortly afterwards it pioneered the services to Europe, the United States, and Australia.

With the foundations now laid, the government decided on a more permanent and comprehensive program of shipping support. This was embodied in the navigation- and construction-bounty laws of 1896. State aids to Japanese shipping thereafter may be summarized as follows:

1. Foreign shipping companies, already barred from trade between the principal Japanese ports since 1894, were excluded altogether from the coastwise trade in 1911, unless on a continuous voyage from a foreign country. Similar laws were applied to the colonies. In foreign trade

¹³ Again in the war with Russia the N. Y. K. placed 400,000 tons of vessels at the disposal of the Army and Navy. Its official history points with pride to one of them, the *Shinano Maru*, a converted cruiser which first sighted the Russian Baltic fleet steaming towards Vladivostok and warned Admiral Togo in time for him to prepare for his decisive victory. Ten other N. Y. K. ships were blown up and sunk at the entrance to Port Arthur to block the channel.

and travel as well, a good deal of business automatically accrued to Japanese companies through the preference given them by government agencies, and presumably by trading and industrial firms affiliated with the big shipping operators.

2. Operating subsidies in the form of postal contracts and navigation bounties were awarded annually to Japanese companies under the laws of 1896 and 1909. A subsidy differential was set up in favor of newer, faster ships, especially if built in Japan and according to government specifications. The larger companies were thus helped to extend their ocean services and modernize their fleets. The war boom after 1915 eliminated the need for such subventions, although they were subsequently revived at an annual average of 11-12 million yen. In the later years they were a minor factor in the competitive strength of the Japanese firms.

3. Construction bounties were also paid in various forms to Japanese shipyards. From 1896 to 1917 they were offered by the government on ships of a certain minimum size, with higher rates for larger and speedier types and for those using Japanese equipment and materials. Only small sums were used in these building subsidies, and they do not seem to have been very effective. It was the wartime shortage after 1914 which first boomed the industry. Launching of steam vessels rose from 52,000 tons in 1909-13 to 646,000 tons in 1919. After the war, however, the shipyards sank back into the doldrums, despite sporadic government measures to revive them with low-interest loans and other financial aids.

4. The spectacular advance in Japanese shipbuilding and fleet modernization came with the expansion of trade after 1931 and the scrap-and-build programs adopted by the government in 1932. Some 11 million yen was spent on the first scheme, by which two tons of shipping over 25 years old had to be scrapped for every new ton built in Japan under subsidy. Subsidies were confined to ships of over 4,000 tons and with a speed of 13.5 knots or better. About 20 per cent of the construction cost was paid by the government. This program, and the two which followed it in 1935 and 1936, led to the scrapping of some 500,000 tons of old shipping between 1932 and 1937. The old tonnage was replaced with 48 new ships of 300,000 tons. By 1937 Japan had a steam and motor fleet of 4 million tons, of which 3 million represented vessels over 3,000 tons, half of them capable of 14 knots or better. With more tonnage under five years than any other national fleet, the Japanese merchant marine was thus handsomely refurbished to engage in world shipping competition, and to serve the Army and Navy in the great war which soon followed.

In summary, state subsidies and other encouragements helped significantly to found the Japanese shipping industry and carry it through its early period of growth. Without them the merchant marine could not possibly have doubled its tonnage each decade from 1880 to 1910, as it did. After that financial aids helped to enlarge the profits of the big operators, to force the pace of modernization, and to influence the design

and the employment of vessels in accordance with considerations of national policy.

In the later years, however, Japanese costs in building and operating ships were below British and American costs. Cheap labor and advances in engineering now put Japan in a strong competitive position, especially after the fall of the yen.¹⁴ Other advantages accrued from the concentration of control over the industry and its close affiliation with related activities. The great Nippon Yusen Kaisha and Osaka Shoshen Kaisha alone grew to possess over a million tons of shipping between them. The Mitsubishi trust controlled the former, while Sumitomo had large interests in the latter. The Mitsui had their own big steamship company. The big combines were equally prominent in shipbuilding; they supplied shipbuilding materials and fuel; and they originated and financed much of the cargo carried in their vessels. These interlacing connections were a source of strength in world competition and facilitated the close control maintained by the government.

Japan's position at the crossroads of East Asiatic trade, combined with the factors enumerated above, thus enabled her to achieve a commanding position in the shipping of the Orient during the interwar period. Probably there were still a few ocean routes, distant or little used, where continued government subsidy to operators was warranted, even on economic grounds. But the chief justification which remained was the vital importance of a large and swift merchant marine as a weapon of national power. It must be added that this point was fully borne out in the Pacific war. Japan won and held a farflung empire during 1941-44 largely by maritime power. Equally, once the Allied counteroffensive against her shipping began to close off the sea lanes upon which her economy depended, she was doomed to defeat.

GROUP INTERESTS AND PUBLIC POLICY

Several other broad areas of public policy enter inevitably into any survey of the role of the state in Japan's prewar economic development. By comparison with those already discussed, they are areas where in the main the government assumed only limited responsibilities and exercised little direct control. But its general attitude was nonetheless of great importance. One was the organization of agriculture; a second was the protection of industrial labor; and the third the control of business organization and practice.

Agrarian Policy

A prominent feature of Europe's transition from medieval to modern times was the breakup of the old agrarian order and its replacement by new forms of proprietorship and new modes of production. The complex

¹⁴ See U. S. Tariff Commission, *Japanese Trade Studies: The Shipping Industry of Japan* (Washington, 1945); also Imperial Shipping Committee, *British Shipping in the Orient* (London, 1939).

adjustments entailed in this change were long a major preoccupation of the developing national state. The statute books, the technological history, and the political struggles of Western Europe from 1500 to 1850 were taken up in no small measure with the emancipation of agriculture and the agriculturist from the bonds of feudalism and their adaptation to a new capitalist order.

It may seem surprising that Japan's emergence from what is commonly described as "feudalism" within the space of a few decades should not have necessitated and brought about a similar transformation, nor required a comparable mass of legislation and regulation in the realm of agriculture. The difference was not merely that European statesmen were solicitous of the well-being of the peasant, or concerned to assure their nation's food supply, while the Meiji leaders were indifferent. Nor was it that Japanese farming quickly sank to minor importance in the industrializing economy. On the contrary, its expansion furnished much of the increment in national wealth and income for forty years, and much of annual revenue going into new capital formation and military expenditure. Even after World War I, when its growth tapered off, it continued to provide the bulk of the country's food supply, while occupying nearly half of the working population.¹⁵

This historical contrast takes one into broad issues which run well beyond the bounds of this paper. For one thing, it involves important distinctions between Japanese feudalism and the different forms of European feudalism, which became steadily more marked as Japan passed through the Tokugawa period. Politically, Tokugawa Japan achieved a fairly high degree of political centralization. Economically, the rise of internal commerce and handicrafts had begun to introduce pervasive changes in the old agrarian economy long before Perry arrived with his warships. These changes would doubtless have progressed even further had Japan's seclusionist policy and geographic isolation not deprived her of the stimulus of international trade such as developed in Europe's narrow seas, and had her nascent merchant class been able, like its European counterpart, to develop towns and cities as independent bastions against a rural aristocracy.

More pertinent to our immediate concerns, Japanese agriculture had long differed radically from that of Britain, northern France, or Germany in medieval times. Neither widespread serfdom, nor the open-field system with its complex arrangement of common rights, nor joint and compulsory cultivation of the lord's demesne, were characteristic of Japan. Nor had they been for centuries.¹⁶ Land was far more closely cultivated than in medieval Europe, where a peasant family required thirty acres or so to maintain itself. Terrain and climate, together with the greater density of the agricultural population, made for reliance on intensive rice-

¹⁵ See "The Scale of Economic Growth in Japan, 1868-1938."

¹⁶ See the writings of K. Asakawa, for example, "Agriculture in Japanese History: A General Survey," *Economic History Review*, II (Jan., 1929), 81-92.

growing by small-farm operators. Labor and manure were supplied independently by the farmer and his family. Irrigation might call for village cooperation and the local *corvée*, but not the close communalism of the European manor. By comparison with most of Europe there was little stockraising, either for food, clothing, or fertilizer. The sea was Japan's source of animal protein. Cultivated land was fairly evenly divided among millions of small cultivators who held a qualified title to the soil—subject, of course, to heavy seigniorial dues and other lesser obligations. The peasant of 1868 was bred in a tradition of self-reliant responsibility for managing his chief means of livelihood, the small family farm, even though his overlords might never have permitted him to retain more than half of its produce for his own use.

When Japan entered the modern period, she was not confronted with either the necessity or the opportunity for a sweeping revolution in the techniques and organization of agriculture. This had both favorable and unfavorable aspects. On the one hand, the heritage of peasant industry, family independence in farming, and village government were real assets in making the transition to modern capitalism. They helped no doubt to mitigate those other traits of individual subordination and deference to authority which might otherwise have had a much more stifling effect on economic initiative.

The Japanese were also spared the long, turbulent struggle which was required in Europe to abolish compulsory labor, common cultivation of the arable, and common rights to pasture and wasteland. In Northern France, it will be recalled, the separation of the demesne set in during the fourteenth century. The process was resisted and reversed in the eighteenth century, however, and not finally confirmed until the French Revolution. In Prussia the *corvée* survived until after 1850. In Meiji Japan, by comparison, it was comparatively easy to do away with the remnants of heritable subjection and bodily servitude; to abolish or continue common rights to forests, meadows, and fishing grounds; and to establish a system of proprietor and tenant-farming based on private ownership. Landlord-tenant relationships, and the whole social structure of the village, retained the quasi-feudal stamp of tradition in many respects. But no complicated tangle of legal rights and obligations stood in the way of commercializing agriculture, or commuting farm rents and taxes to individual obligations fixed in money.

On the other hand, if the old system was not so rigid in Japan, neither were the pressures to change so great. The chief demand for agrarian reorganization of a limited type came from the young bureaucrats of the new Meiji regime. They wanted political unity under the Emperor and adequate fiscal revenue. This led almost at once to the abolition of the old territorial *han*, and the pensioning-off of the aristocracy. One of their first concerns was to create a national system of land taxes paid in money. As necessary concomitants of these changes they proclaimed freedom of

occupation and domicile, and the full right of private property in land.¹⁷

Such reforms effected little immediate improvement in the economic status of the peasants, except for the more enterprising families of the upper stratum. An incipient agrarian movement for more radical change was easily suppressed. Within the villages the more prosperous land-owning households, whose superior status often carried back for generations, continued to retain a privileged position. Social differences came to depend more and more on property. But they were still reinforced by the head-and-branch family system and by semifeudal obligations of leadership and submission. Even had it been otherwise, so great was the density of the rural population relative to land and capital that little scope existed for the rise of capitalistic farming in Japan as it appeared in England, or the Low Countries, once the encumbrances of feudalism were cleared away. Already in 1868 the total population numbered about 225 per square mile, as compared with a density of only 100 in Europe prior to the Industrial Revolution.¹⁸ Moreover, hardly more than 15 per cent of the land area of the Japanese islands could be regarded as cultivable. Most of it had long been tilled intensively by peasant families averaging no more than 2-3 acres apiece. Opportunities for new forms of enterprise, other than mere landlordism, had to be sought elsewhere in the main.

As a result the Meiji "Renovation" wrought remarkably little change in the life of the average farmer, or his system of cultivation. This did not deprive Japanese industry, as it subsequently developed, of a steady flow of labor from the villages. The crescendo of population growth took care of that. Nor did it prevent at least a doubling in agricultural

¹⁷ Beginning in 1872 peasant cultivators themselves received title to most farm lands, except for those held by the Imperial Family, temples, and shrines. The farmer was also granted a new freedom to grow such crops as he wished, or, if he chose, to alienate his land in perpetuity and migrate to the city. In the case of mortgaged land, however, title was awarded to the mortgagor, usually a merchant. Elsewhere, too, the small peasant often lost out, either in the initial distribution, or subsequently through his inability to pay taxes and cope with the insecurities of a money economy. Very early it appears that 30 per cent or more of the cultivated area was already under tenant farming. The necessity to pay taxes on other land under private ownership led to acquisition by the government of a large area of forest and meadow land once held by villages in common or by the nobility. Nobutaka Ike describes this also as "a not unimportant loss" to the peasant, who now had to buy fuel, building materials, and fodder ("Taxation and Land Ownership in the Westernization of Japan," *Journal of Economic History*, VII [Nov., 1947], 168-169). Since stockraising was of little importance, however, the Japanese countryside never experienced those prolonged conflicts over common meadows and pastures which, in R. H. Tawney's words, "kept European villages simmering for over a thousand years."

¹⁸ The England of 1600 had a mean density of 87 persons per square mile. For the Low Countries the figure may have been higher (Abbott Payson Usher, *An Introduction to the Industrial History of England*, Boston, 1920, pp. 90-91, 101).

output over the next half century. But it barred the road to any revolutionary advance in farm productivity, which would have required a sharp reduction in the population on the land. It thus prolonged the poverty and self-sufficiency of rural life, and applied a persistent drag on industrial advance.

Within this limiting framework, post-Restoration governments took certain steps to raise agricultural output and adapt it to the changing needs of industrialization. Various technical aids and rural public works were fostered by the national government, and by local authorities as they gained in financial resources and experience. They helped to reclaim land, improved irrigation systems, and built roads and warehouses. In certain areas land was economized by readjusting and combining scattered farm strips more advantageously. Statutes were passed to encourage village fishing associations and agricultural co-operatives. After 1890 the state developed a network of agricultural experiment stations and other technical agencies which tackled problems of land management, insect control, better seeds, fertilizer practice, etc.¹⁹ In certain lines impressive achievements were scored, as in silkworm breeding. Similarly, a program of scientific conservation was developed on Japanese forest lands, nearly 60 per cent of which remained under the ownership of the Crown and various public authorities.

No form of public investment was more productive than this scientific work, so far as it went. Despite the absence of mechanization, small-scale but pervasive technical innovations in agriculture served to raise labor productivity on Japanese farms by 50-75 per cent in the prewar era. As argued in the accompanying paper on "The Scale of Economic Growth in Japan, 1868-1938," this was of first importance for the whole industrialization and growth of the Japanese economy.

Beyond such technical aids and modest public works, however, the fate of agriculture and the agriculturist was consigned pretty much to the play of private interest and market competition through the Meiji era. Once the initial reforms affecting land ownership and taxation were carried through, the issues of land tenure and distributive justice in the countryside were largely left aside, closely linked as they were with technical modernization. The tax burden remained heavy. Usury flourished throughout the countryside. And little or nothing was done to stop the growth of tenantry by public action to furnish cheaper credit, agricultural insurance, or other protective measures. The inefficiencies of the land-tenure system were perpetuated by the failure to require written contracts to give the tenant security and compensate him for permanent improve-

¹⁹ American experts speaking of the situation at the close of the prewar era have stated that "in relation to cultivated area, and probably agricultural income, Japan spent much more on agricultural research than the United States" (Supreme Commander for the Allied Powers, GHQ, Natural Resources Report No. 59, *The Agricultural Experiment Stations of Japan*, Tokyo, 1946, p. 21).

ments. Farm prices remained at the mercy of the weather and the operations of the "free" market, where the hard-pressed peasant was always at a bargaining disadvantage. Agricultural income increased; but a large and probably growing share was siphoned off the farm as interest on debts, rent to absentee landlords, and taxes spent mainly for non-agricultural purposes.

After 1920 agrarian issues pressed more insistently for attention. The early and easy gains in productivity had been realized. Colonial and foreign foodstuffs now began to press upon farm markets. The further progress of industrialization barely managed to absorb the increase in population in nonagricultural pursuits, leaving stagnant pools in the more remote areas. The rise of tenant disputes was a warning of gathering tension.

The Diets of the postwar decade, now increasingly sensitive to popular demands, were therefore compelled to concern themselves more actively with rural relief. They contented themselves, nevertheless, with a series of *ad hoc* measures which were palliatives at best. Food imports were restricted from noncolonial sources. Operations were begun in 1921 to modify fluctuations in the all-important price of rice through buying and selling operations by the Japan Rice Company. Modest gestures were likewise made to lighten farm taxes and ease tenant-landlord disputes. Most important, the organization of credit and marketing co-operatives was greatly extended under the revised law of 1917. Low-interest funds were provided on a considerable scale through the Hypothec Bank, a new Central Bank of Co-operative Associations formed in 1923, and related agencies. Yet a total farm debt of 5 billion yen still carried interest charges exceeding 10 per cent on the average.

The collapse of farm prices after 1929 made the agricultural situation still more precarious. Millions of farm families suffered acute distress. While again certain stabilization measures were undertaken, no radical reorganization of Japanese agriculture was attempted, or even seriously contemplated. Even the further development of Hokkaido, Japan's own agricultural "frontier," lagged for want of funds. Nor was government money applied to farm relief on any scale, despite the solicitude proclaimed by the militarists who were now regaining power at the expense of the parties. Aid to the peasant was one of the slogans of General Araki, "that loud trombone of destiny." But he failed to produce much action.

If living conditions nevertheless improved slowly in the villages during the thirties, it was largely due to the industrial boom which revived farm prices and attracted labor into industry on an unprecedented scale. Indeed this might be said of the whole half century before the war. As between industrial development and "rural reconstruction," there is no question where the priority was placed by those in authority in prewar Japan. In terms of any final solution of Japan's farm problem, they were basically correct. But even those measures of protection to the small peasant which would have helped and not hindered industrialization were largely neg-

lected where they called for interference with property rights or for large-scale public expenditure. Thus it was left to the Occupation regime in postwar Japan to make the first full-scale attack on this longstanding social problem.

Protection of Labor

In the protection of industrial labor, prewar Japanese governments were no less dilatory.

By 1890 Japan had begun to repeat the ugly if now familiar history of the Industrial Revolution in the West. There was no regulation of hours or wages, child labor, or labor standards of any sort, except for general laws relating to property and contracts. Factory operatives commonly worked 11-14 hours, day or night, and of course at a pittance. They were mostly girls, age 14-20, hired from the countryside by practices which bordered often on seduction. Typically they were lodged in factory dormitories on a three-year contract. As many as 50 per cent are said to have deserted within six months. Labor efficiency was correspondingly low. The old system of familial paternalism carried over into modern industry, with its reciprocal obligations of protection and subordination. But it soon lost most of its kindliness and humanity in the cold calculations of industrial capitalism.

Demands for workers' protective legislation by the state had arisen during the early Meiji years. Such proposals, however, were the work of a handful of intellectuals and socially minded bureaucrats. The idea of spending money on enforcement aroused no enthusiasm among political leaders, who were absorbed in other objectives. The framework of administrative skills and experience was lacking. And any interference was actively resisted by businessmen and industrialists. The Civil Code of 1890 proclaimed "freedom of contract." It was said that a draft factory bill of 1898 was contrary to the spirit of the Japanese family system; or, alternatively, that it threatened the new concepts of liberty and competition. Even the prohibition of factory work by children under ten was defeated. At this time, of course, labor had practically no representation in the Diet. Nor had labor organizations any legal status. The Police Regulations of 1900 made it virtually a crime to agitate for a strike, and the early growth of trade unionism met one of its severest obstacles in the stern suppression of any signs of radicalism.

The first legislative enactments to regulate industrial labor were the Mining Act of 1905 and the Factory Act of 1911. Employer groups succeeded in postponing their actual enforcement until 1916. As finally applied to all mines and to factories with 15 or more workers they imposed a legal limit of 12 hours of attendance (including one hour of rest) for women and for children under 15. The minimum age of entrance was set at 12, except in the case of "light work." Here it might be reduced to 10. Other provisions covered holidays, maternity protection,

and workmen's compensation. Despite long agitation, action on night labor was put off for another 13 years in response to strenuous opposition from textile-mill owners.

The further progress of labor legislation in Japan owed much to the International Labor Organization, formed in 1919. As a member from the outset, Japan began to learn more about the standards and techniques of labor protection in the West, and to feel the force of world criticism.²⁰ At home other forces pressed for reform. By 1925, when universal male suffrage went into effect, there were some 3 million workers in Japanese factories, mines, and large-scale transport. Through political parties and workers' organizations they were beginning to find their voice. Trade-union membership advanced only slowly. It was handicapped by poverty, by the dispersion of small industrial plants, by the predominance of women factory operatives, most of them housed in company dormitories, and by factionalism among union leaders themselves. Moreover, union capabilities were closely restricted by the Peace Preservation Act of 1925. Yet here was a growing force in the cities which helped both to extend the scope of protective legislation and narrow the gap between law and its enforcement. Finally, besides the pressure of international opinion and the demands of labor, a slow process of education was at work among the big industrialists themselves. The more enlightened of them came to realize that better labor conditions did not necessarily mean higher costs—high turnover, accident and disease rates might be a drain even on their own pocketbooks.

The decade beginning with 1921 brought significant advances. The Employment Exchanges Act of 1921 laid the basis for a national system of employment exchanges. A 1924 ordinance curbed some of the abuses in the recruitment of contract labor. The Health Insurance Act of 1922 furnished benefits after 1927 to all factory and mining workers in the event of sickness, accident, maternity, or death. The Factory Act was extended in 1926 to cover all plants of 10 or more workers. Maximum working hours were cut from 11 to 10 in the case of women and children, except that a large part of the textile industry was exempted until 1931. The minimum age of entrance into factories was raised to 14. Children of 12 or 13 might still be employed if they had completed their elementary education. Employers' liability for accident benefits was also strengthened. In 1932 it was broadened to cover workers in construction, transport, and communication as well. Finally the long-contested issue of night work was resolved with its prohibition for women and children in 1929. Later amendments and additions to these measures extended their

²⁰ Here, as in other countries, the I. L. O. made a valuable contribution merely by acquainting the Japanese with labor standards and regulatory practices elsewhere, and by making data on Japan available to the rest of the world. The summary of legislation given here is written largely from its excellent study, *Industrial Labor in Japan* (Geneva, 1933).

scope here and there during the next few years, but made no sweeping changes.

It will be observed that this prewar labor legislation was confined mainly to the protection of women and juvenile workers. Japan followed the precedent of other industrializing countries in this regard. Other broader issues of factory wages, hours of work, and collective bargaining had yet to become the subject of state action. Almost untouched was also the immense field of small-scale industry. Here the problems of regulation were far from difficult, though no less urgent.²¹ Even in factories the enforcement of existing legislation lagged well behind the statutes, especially in the smaller undertakings covered by the act.

All this testifies to the limited advances yet made in the safeguarding of industrial labor and the stubborn resistance from traditional influences and organized employer interests. A government more solicitous for the welfare of its people could have moved long before it did to abate the raw evils of child labor and slum-living, the abuses of the sweatshops and the dormitory, the long hours and other hazards of industrial life. In any event, Japan was now taking belated steps toward recognizing the responsibilities of the state in this sphere of public policy. Had the progress of 1921-36 been maintained for another five years, her position would have invited comparison with that of any other industrial nation facing similar economic handicaps. Unfortunately, a rapid retreat set in after 1937 from the gains of the previous decade. The political reaction brought about by the resurgence of the military and the exigencies of the war which followed ended by sweeping away most of the structure of labor protection. After the war it had to be rebuilt anew.

Control of Business Organization and Practice

We come finally to certain further questions respecting the control of business enterprise. In the widest sense this takes in the whole philosophy of governmental responsibility in economic life. More particularly, to what extent did the Japanese invoke the political authority of the state to regulate the pattern of industrial organization and marketing structure?

The early Meiji statesmen seem to have had no very considered philosophy on the division of responsibility between public and private enterprise, nor the usages of monopoly and competition in the new industries which were created. In its practical application, however, public policy tended towards the concentration of industrial and financial control in the hands of either the government ministries themselves or the business

²¹ The remark of a British Commission reporting in 1866 on legislation to cover small workshops is applicable today throughout the Orient: "It is unhappily to a painful degree apparent through the whole of the evidence that against no persons do the children of both sexes need so much protection as against their parents" (L. C. A. Knowles, *The Industrial and Commercial Revolutions in Great Britain during the Nineteenth Century*, London, 1921, p. 92).

interests with whom the authorities were often in close association. Although influenced by the currents of liberal thought flowing in from Britain and America, the Japanese had no comparable background of hostility to private monopoly and government regulation per se. As in the Germany of Bismarck, both tradition and circumstance called for state leadership in developing the productive powers of the nation; for close co-operation between the state and big business; for intimate relationships between large-scale banking and industry; and for the encouragement of co-operative action and self-regulation on all fronts (except labor organization).

In small-scale trade and industry the Meiji governments refrained perforce from wholesale intervention or control. Their chief concern lay elsewhere, except in one important respect. The early export trade was largely built on small-scale industries producing such commodities as silk products, tea, and straw mats. Here great numbers of small workshops, relying on irregular family labor and remote from the market, made for a haphazard and unsystematic scheme of organization in which there was a chronic tendency to spoil the trade by turning out inferior goods. If exports were to prosper it was essential to improve and standardize the quality of such products.

A special incentive was thus given to a movement which was characteristic of the Japanese anyway. Through a series of laws enacted between 1884 and 1902 the authorities encouraged the formation of local chambers of commerce and guilds of industrialists and merchants for co-operative action. These trade associations were given legal status and tax immunities in order that they might engage in joint investigation, representation, and services like inspection. Although formed in large numbers, it should be added that such limited self-regulation as they achieved did not materially alter the atomistic structure of small-scale business, even in the export trade. This was accomplished subsequently only as a network of financial and marketing relationships developed through merchant-employers and wholesale traders linked to the small producers, on the one hand, with big banks, export-import firms, and factories, on the other.

Much more significant was the use of political authority to facilitate the growth of the great business combines which came to dominate large-scale corporate enterprise. A high concentration of control was inevitable in those industries requiring large investments and advanced technology, especially in the early years. For there were few places outside the government itself where the necessary capital and enterprise could be found. And the limited Japanese market would not support any extensive duplication of facilities. The first factories and mines were given every form of assistance by the government, where not actually operated by the state. Automatically they enjoyed a quasi-monopolistic position.

When the authorities abandoned industrial development more largely to private enterprise after 1882 and adopted a selective policy of pro-

motion, private capital became firmly established and more competitive. But it was still difficult to attract funds into the more difficult and risky ventures, unless there was a clear prospect of large returns. If development was to be rapid, the hazards had to be reduced by government patronage and subsidy. It may be recalled that tariff protection was still ruled out by Japan's "unequal treaties." In such industries as shipping, railways, mining, and metallurgy, the fortunes of the new entrepreneurs continued to be influenced heavily by favors extended or withheld by the Army and Navy, other government ministries, and the official banks. Any ambitious and successful promoter was up to his ears in politics.

The big combines emerged towards the close of the nineteenth century as virtual partners of the state in establishing the industries essential to national power. Mining, metal-working, and large-scale transport all required large financial resources and advanced technical know-how. Even where a start could be made, they were often unable to grow unaided in the face of Western competition. They were built up under forced draught, nevertheless, by awarding exceptional privileges to those groups capable of commanding the necessary capital and skills. And as they prospered in one field, both their financial strength and their political influences enabled them to prosper in others. Thus we find the process of industrial combination displaying very early its typical Japanese characteristics. It tended toward huge agglomerations of miscellaneous enterprise in a wide variety of fields, rather than independent market monopolies in particular products. It was most pronounced in the heavy industries created under state patronage. And it gained a good deal of its momentum from the absorptive power of the big city banks, which were closely affiliated with the industrial combines, and had also close relations with the great semiofficial banks.

The zaibatsu grew to power as "instruments of national policy," in G. C. Allen's words. As their influence rose, they also became makers of national policy, sharing privilege and authority with the military and with civilian bureaucrats and party politicians. So close indeed was the affiliation of the state and big business that it was sometimes difficult to tell where one left off and the other began. Increasingly the top figures in the big combines moved in and out of the government banks and the ministries handling economic affairs. They came to exercise great influence in the Diet through the political parties on which they lavished funds. They worked closely with the Army and Navy in the procurement of arms and equipment and in financial imperialism overseas. They intermarried with the families of the peerage, ranking bureaucrats, politicians, admirals, and diplomats.

It should be added that the owners and executives of the big banks, factories, and trading concerns never attained a decisive position in prewar Japanese politics. Probably this can be said even of their heyday, the 1920's. At the peak of their influence they were merely one wing of the

ruling class, influential in economic affairs but lacking the power to make the great political decisions shaping the destiny of the country. When the chips were down, following the military resurgence of the thirties, they found themselves at a fatal disadvantage in the struggle around the Throne. What they wanted, how they saw the future of Japan, is not too clear. Actually, of course, they differed among themselves, itself a source of weakness. Most of them viewed with gathering alarm the drift of political events after 1931, and particularly after 1936. However, neither wealth nor technical capacity in modern industry, when concentrated in the hands of a few, is any adequate weapon in politics against the determined use of military force and terror. In the end the zaibatsu were the victims of the system they helped to create. They shared in the managerial responsibilities and temporary profits of the war effort, then in the disasters to which it led.

Through the earlier decades, nevertheless, business interests both large and small were left comparatively free to develop most fields of industrial and commercial enterprise with little direct competition or regulation by the state. *Laissez faire* is hardly the term to apply, for it suggests a more negative hands-off policy than ever prevailed in Japan—or, for that matter, the West. As already described, the government retained certain levers of control, particularly through state banking and public expenditure. And it continued its protective solicitude for the strategic industries and colonial development. Outside these restricted areas, however, business enterprise and business practice evolved without much direct control by the authorities. When the national government stepped in with its financial resources or its coercive powers it was more as a protector or partner of large-scale business than as a policeman or competitor. Even in this respect, its direct intervention was confined to a relatively small segment of the total Japanese economy. Over the wider field its influence was pervasive but more indirect, being exercised through taxation and tariffs, credit management, technical education, and other policies discussed earlier.

The structure of private enterprise which emerged can hardly be characterized in detail in this paper.²² Here it is pertinent at least to observe that it was built on a political foundation of law which guaranteed legal security for property rights while extending maximum freedom in their exercise. So far as the law was concerned an investor or entrepreneur was free (until 1937) to enter almost any field of economic activity outside the few monopolized by the state. For the most part a firm could make such decisions as it chose with respect to prices, output, and market practices, either individually or in collusion with its rivals. (This statement, of course, hardly allows for the more pervasive influence exerted informally by the Tokyo authorities in large-scale affairs, or by local officials in their own bailiwicks.)

²² See *The Economic Development of Japan*, chap. iv.

The significance of such legal freedom was enormously increased by extensive resort to the powerful tool of joint-stock finance. This device was taken over by the Japanese without the public distrust of concentrated business power which stamped the development of corporate law and its administration in Britain and the United States. More accurately, public fears that such power might be abused never became an effective restraining force in prewar Japanese politics or legislation. Instead, big business interests worked in close association with the bureaucrats and the parties to evolve a system of law which imposed as little restriction as possible on the exercise of corporate power in large-scale finance and industry. Completely absent from the spirit as well as the letter of the law was any philosophy of public control such as was long ago embodied in the Sherman Act or the Federal Trade Commission in the United States.²³ Virtually unlimited opportunity was thus given for the growth of industrial monopoly, so far as legislation was concerned. The only political influences working in a contrary direction before 1930 arose from the fact that intercombine rivalries carried over from business into politics. On occasion the balance of political privilege acquired by members of the business oligarchy might upset the balance of financial power. More often probably it tended to reinforce and perpetuate it.

The system of business power and practice which resulted was complex and variegated. A large share of Japanese industry and trade—the preponderant share—remained quite atomistic in structure and highly competitive in spirit. In large-scale finance and industry the enterprise system was a rather indeterminate blend of sharp jealousies and mutual solidarity, of rugged individualism and collusive action. There is a striking parallel, in fact, between Japanese politics and big business as regards the structure of power and behavior among the dominant groups. The concentration of political power never led to outright dictatorship. Instead, the various cliques represented in the ruling oligarchy vied with each other for prestige and influence around the Emperor, while combining—except for the extremists—to defend their common interest in the fundamental structure. Similarly, single-seller monopoly was a rarity in Japanese industrial markets. Far more common in large-scale industry was a condition of oligopoly. The big combines shared such markets in varying proportions, attended often by a host of smaller firms in those branches where no great premium attached to size.

These great trusts, with their far-flung activities, contended among themselves in the market for power and profits, while recognizing their mutual interdependence in a broad area of joint interest. The entry of newcomers in the trades they dominated was made difficult by their ownership of mineral resources, patent controls, international agreements, and all the financial and political advantages of bigness. It is significant

²³ See U. S. Department of State, *Report of the Mission on Japanese Combines*, Pt. 1 (Washington, 1946), pp. 21-27.

that a new group of zaibatsu rose to prominence only after 1931 when new armament industries mushroomed, first in Manchuria under the aegis of the Kwantung Army and later in Japan itself.

Industrial Controls, Depression, and War

After World War I Japan shared in the world-wide tendency towards growing intervention by the state in economic life. The drift in this direction was impelled by no single group interest or social purpose. The Japanese had emerged from the war an industrial and trading nation of substantial proportions. They shared in the world-wide dislocations which followed in its wake. More fundamentally, they were now becoming heir to the typical social ills and were beginning to voice the popular demands, which everywhere accompany industrialism. Small businessmen, workers, and peasants were exposed to the relentless crowding of population on the labor market. As the electorate widened and grew in political consciousness, it became more difficult to neglect the economic and social problems which earlier more authoritarian governments had been able to disregard. At the end of the decade came a severe depression which intensified still further the pressure on the government to widen the scope of its responsibilities.

Prior to the slump of 1929-31 little attempt was made to introduce any structural reforms in the organization of industry and trade by political action. Now the shrinkage of markets and fall of prices sharpened the competitive struggle in industry. A number of cartels had already been formed in large-scale, capitalistic trades. They had been largely unsuccessful, however, in restricting production or controlling prices by voluntary action alone, except in a very few cases.²⁴ Among the mass of small industrialists and traders, competition was even more severe. Most of their labor was supplied by the family of the employer himself, or by hired workers who remained at work as long as they could contribute anything to their family budgets. The hard-pressed manufacturer could stay in business by sweating his workers or allowing his plant to depreciate. Voluntary agreements to impose any minimum standards of competition among these small people were out of the question.

The initial pressure for state action came from the big industrialists and financiers themselves. Its earliest form was a program to aid depression-ridden industries to improve their efficiency and lower costs. In 1930 a Bureau of Industrial Rationalization was set up for this purpose in the Ministry of Commerce and Industry. Its more far-reaching objectives were never realized. But it did assist the rapid gains in industrial efficiency achieved during these years under the pressure of falling prices. Also prompted by the slump was a move to give legal force to industrial

²⁴ In 1931 there were only twenty-four voluntary cartels in Japan, most of them inactive (Keizo Fujita, "Cartels and Their Conflicts in Japan," *Journal of the Osaka University of Commerce*, No. 3, Dec., 1935, pp. 65-109).

agreements for the purpose of restricting competition in large-scale industry. The Major Industries Control Law of 1931 empowered the Commerce Minister to require all producers in certain designated trades to abide by agreements to allocate markets or control prices and production, wherever the scheme had been approved by two-thirds of the firms in the industry.

Actually this Control Law did not prove very effective.²⁵ By 1936, it is true, there were nearly fifty industrial cartels in Japan, over half of them in "major industries." In a few of them—notably cotton-spinning, cement, paper, and beer—fairly tight controls over the market were enforced by agreements to control output, fix prices, restrict imports, or operate joint selling syndicates. Elsewhere similar attempts were largely frustrated, or soon broke down, because of fierce jealousies among rival groups and the recalcitrance of low-cost producers enjoying a competitive advantage. As prosperity returned after 1931 and industry resumed its expansion, the more successful firms lost interest in state-enforced agreements which only bolstered up the weak. Moreover, public groups protested that the government should use its power not to encourage monopoly but to protect the consumer. As a result, little use was made of the compulsory feature of the Control Law to sanction cartel restrictions until after war mobilization set in after 1937.

Of greater interest today is Japan's prewar experiment with government regulation of small-scale industry and trade. In agriculture, as we have seen, the formation of rural co-operatives was now widely encouraged to provide the farmer with better facilities for credit, purchasing, and marketing operations. No comparable effort was devoted to strengthening the small industrialist or trader. Prior to 1931 state intervention in this realm was still limited mainly to improving the quality of export goods. But the individualistic traditions of these small trades, the perennial conflict between the small industrialist and the merchant, and the antagonism between the small merchant and the large stood in the way of effective co-operation even for such limited purposes.

Two developments, one at home and the other in foreign trade, spurred the government to extend its efforts in behalf of the small businessman after 1930. The first was the general plight of the small industries, as falling prices intensified the pressures of competition. This created a growing popular resentment against the big financial and industrial interests. One legislative response was a series of measures to relieve and reorganize the silk industry, which was especially hard hit. More generally, the government stepped in to extend the organization of small industrialists and traders into manufacturers' guilds (*kōgyō kumiai*) and export guilds (*yushutsu kumiai*). They were strengthened with low-interest loans and

²⁵ See G. C. Allen's chapter on "The Development of Industrial Combinations" in E. B. Schumpeter, ed., *The Industrialization of Japan and Manchukuo, 1930-1940* (New York, 1940), pp. 680-718.

small subsidies. They were encouraged to engage in joint purchase and sale, financing of members, and inspection and standardization of goods. In some cases they were urged to control output and prices. By 1937 over seven hundred manufacturers' guilds and thirty-six federations had been organized in trades producing textile fabrics, clothing, pottery, wood products, foodstuffs, metal goods, rubber wares, etc. In a few instances they were endowed with compulsory power to enforce the compliance of nonmembers with their regulations. But they had to rely in the main on voluntary methods, and this continued to be a grave source of weakness in these fiercely competitive trades. The revival of trade after 1932 improved their position; how much the guilds actually contributed to this end is open to question.²⁶

The export guilds, like the manufacturers' guilds, were conceived originally as a medium for voluntary co-operation and joint facilities to aid the small businessman. After 1933 a second and unforeseen use for them arose in connection with the world-wide spread of discriminatory restrictions upon Japanese goods following the depreciation of the yen. This made necessary some form of pervasive control machinery, either to administer quotas imposed abroad, or to forestall threatening restrictions.

The government turned to the export guilds to perform this function. As the occasion arose they were endowed with legal authority to regulate the volume and price of exports under government supervision. It was largely in this realm, too, that certain manufacturers' guilds were given compulsory powers, often with confusing conflicts of jurisdiction. By 1937 there were 94 such export guilds in various industries. Some were countrywide and others regional. Forty-four of them were organized in relation to particular products, 33 in relation to particular markets, and 17 on a combination of the two principles. Cumbersome as the machinery became, compulsory restrictions on the volume and price of goods were now being applied on 10 per cent or more of the total exports to foreign countries.

This whole episode in the organization and control of small industrialists and traders demonstrated both the possibilities and the difficulties in political action to strengthen small business enterprise. In its original conception the experiment got far enough to indicate that government initiative backed by cheap credit might have accomplished a good deal through the techniques of voluntary association. Equally, it posed questions as to what the ultimate effects on Japan's industrial efficiency would be if the policy were carried to the point where radical alterations were made in the structure of production and marketing in the interest of the small industrialist. Long before this happened, however, the program was deflected from its initial purposes. First it was turned to the function

²⁶ For an excellent evaluation of this whole movement see the account by G. C. Allen, *op. cit.*, pp. 760 ff. Details concerning a number of industries will be found in Teijiro Uyeda and associates, *The Small Industries of Japan* (New York, 1938).

of export control. And after the outbreak of Sino-Japanese hostilities in 1937, the whole network of industrial and trading associations became simply a part of the machinery by which the Japanese economy was mobilized for war.

From this point on, under the aegis of the militarists, Japan moved rapidly towards the "New Economic Structure" which was to give the state sweeping powers over economic enterprise in almost every sphere. Free entry into business became a thing of the past with the passage in 1937 of the Emergency Funds Adjustment Law. Government approval was now required for any capital outlay in excess of 50,000 yen, or any new firm capitalized at over 200,000 yen. Key industries like electric power, shipping, automobiles and aircraft, as well as all essential materials, were placed under strict official control. In various strategic fields the government formed semimonopolistic "national policy companies." In others it encouraged new consolidations and mergers of private concerns to force the pace of expansion. The Major Industries Control Law was revised in 1936 and 1937 to strengthen its coercive features. A year later came the General Mobilization Law conferring virtually unlimited powers of regulation upon the government.

Japanese industry was now blanketed with a system of state-supported cartels in the form of control associations of every description. By 1941 there were said to be as many as 20,000 associations engaged in "controlling activity" with some degree of government authority. Private business fought a rear-guard action against this encroachment upon its traditional sphere. Small producers were helpless to defend themselves, of course. Being engaged mainly in the production of consumer goods, they suffered heavily as a class. The big concerns made a good thing out of it where they could, and managed to retain major responsibilities in directing the whole apparatus of control. By the time of the Pearl Harbor attack, however, the structure of industrial organization and entrepreneurial responsibility on which the Japanese had built their industrial economy over fifty years was beginning to be altered almost beyond recognition. In Japan, as in many other nations, it was war which undermined its foundations.

MOMENTUM OF ECONOMIC GROWTH

Role of the State

Clearly the course of Japan's economic development after the Restoration was powerfully influenced by the militaristic and mercantilistic cast of her political institutions. Her heritage of feudalism, the ambitions of her new leaders, the kind of world she now entered—all combined to project the state into a prominent role and endow it with broad responsibilities in creating the framework of industrialization.

As we have seen, the authority of the government was freely invoked in the early years to stimulate new investment and technological change,

and to guide economic development in accordance with national interests as conceived by those in power. Conceptions of national interest were intermingled and identified with personal and group interest, of course, as they were in the Navigation Laws of seventeenth-century England or the Bonapartist reforms of nineteenth-century France. A rapid succession of measures established a milieu of law and administration and finance within which the gestation of capitalism took place. Beyond this the government itself actively shared the initiative in building systems of transport and communication, establishing credit institutions, and even launching new factory enterprise. After the turn of the century, as it receded more into the background, it still kept its grip on certain levers of economic power. It used them to underwrite the established order and to move its economic center of gravity increasingly towards industrialism. Particularly it employed them to encourage those industries and activities which were strategic to Japan's war potential. All this is readily demonstrated and has been discussed at length in the foregoing pages.

The more difficult problem is to evaluate the importance of political factors in the real substance and dynamics of Japan's economic growth over half a century. Particularly, what part did social action through political mechanisms play in the crucial process of innovation by which Japan moved from the old to the new? If industrialization multiplied the nation's productive powers four- or fivefold,²⁷ through what propelling force and by what instrumentalities was this achieved? The basic tools were modern science and machinery. The opportunity for rapid economic advance was provided by opening the door to foreign trade and cultural contact. But the task itself required sweeping changes in the organization of national life. It called for increasing specialization of functions, new forms of social co-operation—above all, a new spirit of enterprise in large sectors of the economy.

In interpreting this process, the historian can be misled by the fact that its political features are more readily observed and recorded. Public decisions like the enactment of a statute or an investment by a state bank inevitably attract more attention than productive innovations by thousands of small textile weavers, for example, whatever their real significance.

The vigorous initiative of the Meiji oligarchy and the pervasive influence of the state in subsequent times make it easy to exaggerate their substantive importance for the whole process of economic growth. From some accounts one might conclude that Japanese industrialization from 1868 to 1938 was largely the creation of a quasi-totalitarian state. The political authorities are pictured as bending their energies to the task with far-seeing unity of purpose and an almost unlimited grant of authority from a docile people. If great strides were made in assimilating machine technology, if capital accumulated rapidly, if output and markets grew apace, this is attributed in large measure to the driving political leadership

²⁷ See "The Scale of Economic Growth in Japan, 1868-1938."

of the nation and the disciplined obedience of its population. In particular, war and armaments are sometimes said to have given the chief impetus and to have swallowed up most of the fruits.

Any such picture of Japan's economic development greatly oversimplifies and distorts the reality of events. For one thing, the Japanese state was by no means so monolithic or single-minded in its leadership as this would imply. Within the oligarchy no such unity of interest and outlook existed, except on the broad fundamentals of internal stability and overseas expansion. On the contrary, in many particulars of economic policy one finds sharp conflicts and rivalries among various factions of the military, the civilian bureaucracy, and business interests. Commonly decisions regarding a budget, a tariff, or a banking statute were reached by a process of political logrolling and compromise which was consistent with no single, calculated philosophy of national interest. Especially was this true after the turn of the century, with the gradual disappearance of the elder statesmen who had piloted Japan through the Restoration period. As the commercial classes grew in influence, and with them the political parties, the emphasis in national economic policy shifted increasingly from national power to wealth and well-being, at least for the propertied class. Perhaps it would be more accurate to say that elements of self-interest, always present in the mercantilist policies of the clan oligarchs, became more confused and more contradictory as wider groups in the population came to share increasingly in political power. At any rate I am unable to conclude that Japanese political leadership in economic affairs was particularly coherent or far-seeing through much of the period after 1905.

More relevant here, a study of the whole process of economic growth in modern Japan leads to the conviction that the real drive and momentum lay in large measure outside the realm of national political ambition and state activity. At most the latter only accelerated a process of industrialization which was latent in the whole conjuncture of forces at work. The underlying motivations were doubtless complex, joining nationalist sentiment, individual aspirations for economic betterment, and other values which facilitated common action towards socially approved goals. At home were latent resources, both human and material, which awaited development through the growth of knowledge and widening of personal opportunity. Abroad, the Japanese had the good fortune to enter the world economy at a time when they were able to gain relatively free access to the industrial technology and materials in which they were deficient. In this setting they proceeded to build a new structure of industrial and commercial enterprise on the foundations already laid in Tokugawa times.

T. S. Ashton speaks of "those spontaneous forces of growth in society that arise from ordinary men and women and find expression in voluntary association, as well as in the State."²⁸ Operating within the context

²⁸ "Economic History and Theory," *Economica*, XIII (May, 1946), 84.

of Japanese tradition, with its stress upon leadership, imitation, and group cohesion, this basically was what built the modern Japanese economy. Except in a few respects, some important and others quite marginal, economic output did not grow in response to the plans or dictates of the state. Political forces helped to create a favorable psychic milieu, and the political mechanism was employed to provide certain important stimuli. But if economic expansion turned almost at once towards industrialization, it was fundamentally because Japan's resources, aptitudes, and opportunities drove her in this direction. If it was an orderly, organized process, it reflected less the coercive drive of the state than the Japanese capacity for consensus and voluntary co-operation. If it had real substance, it was because of the enterprise and energy of millions of small businessmen, farmers, and workers. To be sure, the more advanced techniques of finance and factory production were pioneered by the big concerns in close association with the government. They developed new sources of fuel and power; they created a network of long-distance transport; they provided a large share of industrial-capital formation. No less important, they built up an overhead structure of commercial and credit organization which enabled myriads of small traders and industrialists to be linked together in co-ordinated but highly specialized patterns of activity geared to expanding markets. Nevertheless, without the exercise of personal initiative and entrepreneurial responsibility in increasingly pervasive fashion, and not merely at the top, the imperial ambitions of Japan's rulers would never have achieved any material foundation. They would have remained little more than the dreams voiced by Motoori Norinaga in the eighteenth century.

The sphere of actual state ownership was closely circumscribed after the experimental ventures of the early years. Aside from routine government services, indeed, state undertakings provided only a negligible share of the national product. Furthermore, the real economic growth of Japan took place chiefly in those areas of private activity which owed least to political subsidy and support. Vast sums were spent on conquering and developing the colonies, it is true, but this effort returned only a modest yield in trading or job opportunities. Particularly as a source of food the colonies were important; yet Japan's primary economic interests abroad lay outside the Empire, and were only placed in jeopardy by military expansionism.

Meanwhile, at home, those industries for which the government was always most solicitous, and where the zaibatsu were prominent—the strategic industries—furnished only a small part of the growth in Japanese national income before 1935. Probably they served as an actual drag in so far as they were expanded after 1920 by political protection which attracted capital and skills from more productive employment. However this may be, they remained a small segment of the Japanese economy, despite their sheltered position. By way of illustration, the entire complex

of mining, metallurgy, and machinery industries furnished no more than 8 per cent of Japan's national product in 1930, and still less of her gainful employment.²⁹

Various exceptions may be made to this general argument, of course. Money values of production and trade are a poor guide to the importance of particular lines of enterprise, some of which are basic to a whole array of activities. The Japanese railways and electrical communications were of this character. They were either built by the government or soon nationalized. On the other hand, two other basic industries, coal and electric power, were developed mainly through private investment and enterprise, profiting of course from political favors whenever they could be secured. The rapid rise of the merchant marine owed much to the assistance lavishly given by the state. Yet even the shipping industry grew eventually to large proportions chiefly because underlying economic circumstances were favorable.

Still more was this true of the broader fields of consumer industry, agriculture, and miscellaneous services which made up the great bulk of Japanese economic life. In the neighborhood and the village, no doubt, few major innovations in such trades were ever attempted without the consent and support of the local elders who also controlled political life. Similarly in larger affairs the degree of informal control exercised by politically dominant groups went well beyond the laws on the statute books and the formal regulations of government ministries. By and large, however, through a wide range of small-scale industry, local commodity-handling trades, and personal services, even in a good deal of large-scale enterprise, one gets the impression of governmental indifference, certainly of inaction, so far as positive intervention through the formal mechanisms of the state is concerned.

The stimulus to growth throughout most of the Japanese economy came from an expanding demand which had two characteristics worth emphasizing in this connection.

First, it occurred predominantly in the home market. Foreign and colonial markets at their prewar peak (1927-36) took no more than 25-35 per cent of Japan's manufacturing output, nor more than 20 per cent of her entire national product of all types. Nor did the overseas market for all goods and services, or even for manufactures alone, increase very much more rapidly than the domestic market after 1910.³⁰

Second, the national demand represented mainly the growing requirements of the civilian economy, expressed through private expenditures for goods and services.³¹ Private-consumer outlay certainly accounted for at least 65 per cent of gross national product, and private-capital formation for most of the remainder. Notwithstanding the catalytic effect of certain

²⁹ See *The Economic Development of Japan*, chap. ix.

³⁰ *Ibid.*, chaps. vi and viii.

³¹ *Ibid.*, chap. viii.

state undertakings this was true of the Meiji years; equally from 1911 to 1936. In the realm of civilian enterprise occurred the great expansion of Japan's productive powers which carried the more marginal, strategic industries, as well as the whole cost of Japanese armament. Here was produced the real wealth which enabled the country, in addition, to support a growing population at a slowly rising standard of living.

The factor war, with which state economic policy was so closely identified, has often been grossly exaggerated as the mainspring of Japan's industrialization. The constructive achievement of Japanese militarism was to preserve the nation's independence, particularly in the early years. Thereafter military expenditures in the limited conflicts with China and Russia gave a fillip to economic expansion through the multiplied effects of state borrowing and spending on the whole economy. As described earlier, they reinforced the bias towards easy money and a high level of investment which was a marked characteristic of this period. In this respect they may actually have paid for themselves in good part, by stimulating fuller employment and technical progress even in civilian production.

Against these gains must be set the continual drain of armaments on Japan's limited capital resources, on her advanced machine skills, and especially on the government budget itself. From 1895 to 1935 some 40-50 per cent of the national revenue was regularly spent on the Army and Navy, or on servicing loans incurred for military purposes.³² This cut heavily into the governmental resources available for public works. It crippled education, farm relief, and other welfare expenditures which only the government could undertake. The dearth of public funds for such purposes was a persistent feature of this whole period. Moreover, the taxes which supported the military establishment probably came increasingly out of private income which would otherwise have been saved and invested. Even the foreign borrowings of the national government, which climbed 1,427 million yen in one decade, 1903-13, were devoted in large measure to military use, either directly or indirectly. So, too, was a large share of the 360 million yen indemnity secured from China just previously. A small fraction of these sums spent on reducing disease and accident rates in urban industry, for example, would have multiplied productive efficiency as well as human well-being.³³

³² *Ibid.*

³³ The national debt soared from 539 million yen in 1903 to 2,592 million yen in 1913, as a result of the war with Russia and the program of railway nationalization which followed. The "extraordinary" military expenditures charged to the war (1,730 million yen) were largely balanced by borrowings in London and Paris. Ushisaburo Kobayashi makes an interesting estimate of the uses to which the government had put the funds raised by its loans outstanding on March 31, 1913. (2,744 million yen.) (His own designation is the year 1912, but this appears to be an error.) The breakdown is as follows: war and armament, 55 per cent; railways and public works, 29 per cent; Formosan and Korean development, 3 per cent; financial adjustment, etc., 13 per cent (*War and Armament Loans of Japan*, New York, 1922, pp. 94-95).

The drain of empire-building thus went far to nullify the more constructive use of state power to mobilize savings for investment in productive enterprise. Fiscal and monetary measures employed for this latter purpose were especially important in the early years. At that time the private-capital market was undeveloped. The problem in considerable degree was one of mobilizing surplus income from agriculture for industrial and commercial investment. Then, too, armament building could be justified much more easily as a measure of defense. After the turn of the century, however, Japan's economic advance owed little to her military expansion, unless we are to assume that Russia or some other power would otherwise have placed her in subjection. Rather, the debt was the other way.

Significantly, the war which profited Japan the most was World War I, when she remained neutral in all but name. Had she again stayed on the sidelines in World War II, she might once more have reaped fabulous gains. Instead, she wrecked her own economy and laid waste that very part of the world on which her prosperity depended. Professor Ashton, to quote him again, once suggested that the misery and unrest which attended the Industrial Revolution in England during the early nineteenth century was not so much the product of the factory system as of the Napoleonic wars. Under more peaceful conditions it would have been far easier to raise living standards as productivity advanced, to mitigate the evils of slums, and to reduce the insecurities to which industrialism exposed both the farm and city worker. Certainly this has been true of Japan.

The foregoing remarks all cast doubt on the thesis, even in the case of Japan, that the state was "the chief element in economic development" or the statesmen "the chief actors." Much of the same opinion may be ventured with regard to the zaibatsu, especially in those undertakings which required continued patronage from the government because they were never able really to stand on their own feet. The energies, the skills, and the ambitions which provided the real motor force of Japanese industrialization were much too pervasive and too diverse to be compressed into any such formula. They found expression through the activities of millions of small industrialists, tradesmen, technicians, farmers, and workers, as well as in the superstructure of big business. The economic modernization of Japan cannot be explained by "laws" of economic determinism, in which new modes of production follow one another in an inexorable sequence. But equally it went far beyond the activities of a few bold pioneers and organizers, whether statesmen, industrial magnates, or scientists. Also involved were hosts of small, unknown entrepreneurs who introduced and spread the new learning, and still larger numbers of humble workers who provided the growing pool of modern technological skills. This, too, called for initiative and adaptability.

Innovation and Enterprise

It would be interesting to know more about the dynamics of the process by which new techniques were introduced in Japanese industry in large-scale trade, finance, and transport, and to a lesser extent in agriculture. The subject runs far beyond the bounds of this paper, but two or three further observations may be appropriate.

One cannot escape the conviction, first of all, that the comparative speed of Japan's economic modernization owed much to the fact that both her geographic position and her particular complement of resources destined her for the role of an industrial power with extensive maritime trade.

Already by 1868 Japan was densely settled, with a population of 2,000 per square mile of cultivated land—almost as many as in the United Kingdom today. If she was to develop she had to industrialize; her primary industries offered only limited opportunities for expansion. And if she was to industrialize, she had to trade, especially as she lacked so many essential materials. Fortunately the Japanese islands lay athwart what were destined to become the main trade routes of the Western Pacific. They were well situated for extensive contacts with both Asia and the West. Overseas commerce, particularly with the United States and Europe, served as a broad highway for the introduction of new stimuli and new techniques. These in turn pushed the nation still further along the road to industrialization.

A related geographic factor of hardly less importance was the configuration of the country. Japan is smaller than Sweden or Siam, and most of the land area is within one hundred miles of a port city which has also tended to grow into an industrial center. Short land distances and interior communications by sea were a great advantage in achieving political order and unity and also in fostering the easy movement of goods and people within the framework of a growing national market. They partly explain the remarkable surge of the population to the cities which was such a conspicuous and essential feature of industrialization. They also encouraged the dispersion of many industries through the countryside, even industries heavily dependent on imported materials and export markets. In such ways they favored the diffusion of new wants and new knowledge far more readily than is apt to be the case on a massive continental area like India or China. And they spared Japan part of the immense capital outlays required by such countries for land transport and water control. For example, coal at tidewater and localized water supply for irrigation were great advantages.

Finally, if the practices of industrial monopoly did not exert a more baneful effect on Japanese economic development than they did, this was due in part to competitive safeguards imposed by this essential dependence on foreign trade. At home there existed no raw material base comparable to the Ruhr on which to build powerful and restrictive monopolies in

large-scale industry. Most Japanese industries had to rely in increasing degree on foreign materials if they were to grow. Moreover, the big combines were apt to find themselves on both sides of the fence, as importers as well as producers. A further restraint on market monopoly was the persisting need to import a good deal of machinery and equipment from Western manufacturers; also important for many industries was a highly competitive export business, which in turn handicapped efforts to control the domestic market. After World War I the competitive stimulus of imports was weakened by the rise of Japan's tariff duties and the growing technical maturity of her industry. Still the continuing necessity of foreign trade, and its competitive character, operated as a check on the traditional Japanese propensity towards combination and group action. Otherwise the latter might have had a more stifling influence on technological progress.

Smallness and poverty in soil and subsoil resources are hardly unmixed blessings, to be sure. Yet with nations as with individuals they may contribute powerfully to the dynamics of development. Japan's small size, her insular position off the coast of Asia, and her meager endowment in natural wealth per capita are often said to have created a national sense of inferiority and insufficiency which has made her people historically receptive to new ideas from abroad. However this may be, as a practical matter they aided the Japanese materially during the nineteenth century, first, in avoiding the full force of Western imperialism and preserving their political independence, and second in launching a program of rapid modernization. Among various patterns of economic development, circumstances dictated from the outset that their only choice was to industrialize, urbanize, and trade. This pattern is not without its disadvantages, and Japan has certainly not escaped the ills which attend it. It did serve, however, to maximize the inflow and permeation of science and industrial arts from the West at a rate not yet experienced by any other Asiatic nation.³⁴

Physical factors alone, of course, do not explain the dynamics of growth. Many nations bear witness today to the fact that modern tech-

³⁴ England, too, in an earlier day and a quite different setting, reaped the advantages of island security and political unity; of easy access to the Continent and the New World; of limited wars fought with the aid of subsidies and the balance of power; of tidewater coal; of a climate salubrious for the cotton textile industry—the pioneer of the Industrial Revolution; and of a long succession of technical borrowings through the migration of technical skills from Germany, France, and the Low Countries. These circumstances help to explain the paradox described by Barbara Ward as follows, which is no less applicable to Japan: "Knowing what we know today about the advantages to industrialization of large internal markets . . . and of secure access to raw materials, we should not have picked an island off the coast of Europe as the most favorable spot for beginning the industrial experiment. Geography would always set limits to the growth of a large internal market . . . [and] few of the raw materials necessary to modern industry can be found within Britain's frontiers" (*The West at Bay*, New York, 1948, p. 23).

nology does not necessarily seed itself and take root in a backward, tradition-bound economy even where outside contacts bring it within easy reach.

Japan's industrialization, it is true, was more largely a matter of transplanting and adapting to Japanese conditions the techniques already developed in the West than of primary contributions to the world's stock of knowledge. Yet borrowing of this sort calls for more than rote-like absorption. It requires purpose, criticism, and a creative synthesis. New modes of production are apt to encounter subtle and powerful resistance. And this may take the form not only of political disorder, or indifference to material progress, but a deeper hostility to the habits of mind and social arrangements which they require. Even within a single country the degree of assimilation may be uneven among various regions and occupations, as the case of Japan herself well illustrates.

Like the other great societies of the East, Japan resisted certain aspects of Western culture, with its emphasis on individual self-assertion, competitive striving, and democratic expression. Inner values of the spirit have been tenaciously shielded from the disruptive penetration of Western ideals. But in the realm of the industrial arts at least, too much has been made of the docility and conservatism of the Japanese. Here, within the limits of his environment and the opportunities which have come to hand, he appears to have displayed a ready willingness to abandon old ways, particularly where the acknowledged leaders of society pointed the new. This willingness to venture and to learn, in a climate of opportunity which makes it pay, is an essential condition of economic development. That it appeared first at the top of Japanese society is not surprising. What impresses one is the degree to which it spread subsequently through a broad stratum of the population.

It was of great importance, of course, that a considerable segment of Japan's ruling class manifested a spirit of enterprise and adaptability at an early stage of her contact with the West.

In contrast to the gentry and aristocracies of most other Asiatic nations, and many of their own compatriots, a number of young samurai grasped eagerly at the potentialities of Western learning. They were already restive in the chaotic state of affairs under the Shogunate, which had virtually declassed many of them and driven them into farming and trade. Despite the antimercantile tradition of their class, it was they who began to display a spirit of capitalistic enterprise in manufacturing and commerce long before the overthrow of the old regime. In this they were joined by the richer peasants of the central and western regions and the new merchant class emerging in the port cities.³⁵ From these elements were

³⁵ It has often been remarked that the leading *chonin* of the Tokugawa era failed as a rule to make a successful transition to positions of prominence in the new order. Their close ties with the old nobility and their generally conservative outlook stood in the way. This exemplifies what is perhaps almost a law of economic evolution. The leading industrialists of nineteenth century England, too, were not

recruited the bureaucrats, businessmen, and technicians, who led the way in exploiting the new technology, in economic life as well as government. The common class roots of many leaders in the two fields facilitated the close interrelationships stressed earlier in this paper.

Only later, as experience accumulated and knowledge became more widely diffused, did increasing numbers of commoner families begin to respond to the new forces in such a way as to give breadth and depth to the process of modernization. Certain economic gains followed quickly and almost automatically from the new freedom of occupation, the extension of cultivation, the reforms in currency and taxation, the improvement in transport, etc. However, beyond the façade of state-sponsored industries hastily erected in the early years, it took time for the process of innovation to reach back into traditional Japanese society. One great retarding factor was the quick response of population increase, which so discouraged advances in productivity by more capitalistic methods. Many traditional occupations seemed unaltered in their essentials even after fifty years. In particular, Japanese farming as a way of life changed very little, despite scientific improvements in agriculture which the experts have described as "a chemical and botanical revolution."

Throughout this whole process of growth emphasis must be placed on what seem today very modest innovations: the ricksha and the bicycle; the rodent-proof warehouse; elementary sanitation; better seeds and more fertilizer; kerosene and then the electric lamp; a simple power loom; the gas engine in the fishing boat; the divorce of personal from business accounts; the principle of limited liability. Big and dramatic changes like railways and great banks and holding companies might provide the scaffolding. But the structure itself was built, brick upon brick, by myriads of individual experiments and commitments. Inevitably this was a slow process, as it will be throughout Asia.

The system of enterprise through which this development was organized and directed may be described as predominantly one of private ownership and market competition. There are many qualifications to this statement, of course. Yet little capital was invested in new enterprise except on the basis of private-profit expectations. Losses were mainly a private responsibility, except in comparatively few trades. The innumerable decisions regarding what to produce, how to produce it, where to sell it, were left primarily to private initiative, subject only to various political inducements and controls and the more subtle influences of community pressure.

Within this system it is significant that as late as 1930 one in every three persons gainfully employed in Japan was still in some sense an entrepreneur, carrying some risk and responsibility for business enterprise. Even

in the main the successors of the merchant manufacturers of the eighteenth century. For example, the woolen masters of Norfolk and Devonshire were unable to change their ways. So it was very largely throughout Europe.

in the manufacturing industry, plants of less than one hundred operatives, most of them separately owned, still accounted for at least one-half of total output and total employment.³⁶ Despite all the limitations which prevailed upon the independence and the resources of the small businessman, this meant a vast number of establishments within which new products and new ways of getting things done might be tried out. It put to work a strong incentive to save which everywhere tends to be more powerful among small businessmen than among wage earners or large capitalists. It divided the risks in tiny parcels, with a cumulative gain from successful innovations. Much of the most productive investment and modernization of techniques took place in these medium- and small-scale sectors of the economy.

To speak of private enterprise and competition as the economic system of modern Japan is not to deny the inward differences between the system as it developed here and its prototypes in the West. If competition was keen, its forms were influenced by age-old traditions of hierarchy and group solidarity. If enterprise was privately owned, the individual entrepreneur yet conducted his affairs in a context of Japanese ideals and institutions, with its own set of family obligations, paternalistic controls, and other social incentives and restraints. No people have ever organized economic life on the basis of unrestrained individualism, and certainly not the Japanese.

The small industrialist or trader, as well as the farmer, continued to operate essentially a family enterprise, utilizing family labor and drawing little distinction between family and business affairs. His independence in external relations was closely limited by mental horizon as well as meager financial resources. Where he was integrated into a larger framework of production and trade, he was apt to be heavily dependent on the larger merchant, factory, or bank. These circumstances are not peculiar to small-scale enterprise in Japan. What is striking about the Japanese case is the amount of growth and technical improvement which nevertheless took place in many such trades. Perhaps the outstanding reason is the one often remarked upon. The Japanese were peculiarly successful in organizing and extending complex systems of production and marketing within which numerous small establishments came to perform highly specialized functions and were yet linked together in a flexible and far-reaching pattern of social co-operation. Geography favored such arrangements through providing good interior communications and easy contacts between the port cities and much of the countryside. But the Japanese themselves appear to have inherited a flair for such patterns of group action.

The financiers and executives who built Japan's large-scale industries displayed marked capacity in performing the classic functions of capitalistic innovation. Yet here as well it may be remarked that Japanese businessmen often seemed cautious in asserting the spirit of self-reliant venture.

³⁶ See *The Economic Development of Japan*, chap. iv.

The corporation manager, like the political bureaucrat, was prone to take shelter in group responsibility. There were few rugged "captains of industry" even in the early days; corporate action came naturally to the Japanese. The great combines employed all the latest financial devices for concentrating business power, but their prominence in modern Japan was itself an expression of old traditions of authority and teamwork. So, too, were their close relations with the government.

The opportunities of industrialization enabled successful enterprises to reap handsome, quasi-monopolistic rewards, for private capital would venture into new and risky fields only where large profits could be anticipated. Even then, the tendency was to insure against risks wherever possible by restraining competition and securing the patronage of the state in one form or another. A British observer of Japanese business at the close of the Meiji era had this to say:⁸⁷

Men look to the Government for aid, and having received it try to stifle competition. Success depends more on manoeuvring for privilege than on a steady persevering struggle against obstacles. As a natural sequence the supply of active, resourceful, self-reliant men of affairs does not keep pace with the demand, hence the timidity of capital and the cry for more and still more Government assistance.

All this is not surprising, in view of Japan's authoritarian background, and the difficulty which any people face in moving out of a static, traditional economy into new and untried fields. More surprising is the speed with which the Japanese moved to take over the organization and the skills necessary to modern industrialism. For example, while other peoples in Asia have shown no less aptitude for mechanical skills, the Japanese, aided by geographic circumstance, accomplished with unusual facility the great occupational and regional shifts in population which were no less important for industrialization. Considering the age-old emphasis on status and conformity and the attachment of the peasant family to the soil, one might have looked for much more inertia, if not active resistance to new modes of activity which put a premium on personal initiative and dynamic change.

It appears, too, that the Japanese experienced less difficulty than most Oriental peoples in building and operating large-scale administrative structures which would make effective use of new skills and energies in business and government. Elsewhere in Asia such structures have degenerated all too often into nightmares of nepotism, corruption, and administrative disorder. Japanese society, like Chinese society, was traditionally oriented on a family basis in considerable degree. But not in the same exclusive, atomistic fashion. As described in Professor Levy's paper, the family

⁸⁷ Charles V. Sale, "Some Statistics of Japan," *Journal of the Royal Statistical Society*, LXXIV (April, 1911), 472.

obligation was qualified by, and ideally subordinate to, higher loyalties to one's overlord, and ultimately to the Emperor. This helped not only to forge a new political unity after 1868, but also to create other new forms of social co-operation which were able to function fairly efficiently.⁸⁸

Yet respect for hierarchy and group discipline will not alone create modern industrialism. They may serve only to stifle it. One should beware of exaggerating this feature of Japanese modernization. It was an asset only in so far as it was accompanied by, and did not stultify, the ambition to advance by adopting new ways and the willingness to venture along new paths pioneered by leaders. Since it is so commonly stressed in accounts of Japanese industrialization, I have chosen rather to emphasize the factors of innovation, imitation, and enterprise. Only slowly did new value standards and technical capacities mature, of course. They remained heavily qualified among the great mass of people, especially in the more remote rural areas away from the urban centers of change. Yet it was this process, advancing bit by bit throughout a wide range of occupations, which gave mass and momentum to Japan's economic advance.

The State and Economic Growth: Conclusions

The dynamics of Japan's economic development thus involved numerous elements of social organization, geographic circumstances, and historical setting. Many of them are not difficult to observe in operation. But to evaluate and integrate all of them in a comprehensive theory of economic growth which really gets at the root of the matter is a most elusive undertaking. It will not be attempted here; perhaps, to quote Lionel Robbins on the causes of material progress in general, one should be "content to leave the devising of sweeping generalizations to poets, metaphysicians and amateur historians."

One aspect of the matter in particular, the role of political forces operating through agencies of the state, has been examined in this paper. The outlook, the energies, and the authority of the Meiji leaders were clearly of immense significance, leaving a deep imprint on the subsequent course of economic development.

Yet the picture which emerges does not show the state in the central

⁸⁸ The military heritage of the Japanese ruling class may have helped in adopting modern patterns of large-scale administration, in so far as it was conducive to clear definition of authority and responsibility, discipline, and adherence to impersonal, uniform standards of efficiency which overrode family obligations and other extraneous considerations. The modern Japanese Army has had its cliques and internal political intrigues; yet it is interesting how quickly the Japanese, in contrast with the Chinese, created a centralized structure of command and general staff based on German models, a modern system of technical training, and a practice of assigning new young officers on the basis of merit to responsible posts of command and administration. Japan's success in this regard was what gave her an easy victory over China in the war of 1894-95. The same traits applied to the business world, perhaps in more qualified fashion, have contributed to the growth and efficiency of large financial and industrial organizations.

planning and directing role often ascribed to it, so far as the principal areas of economic growth are concerned. Especially is this true of the period after 1890, when the great expansion took place. Certainly no sufficient explanation of Japan's industrial development can be found merely in the thesis that her political tradition endowed her with an authoritarian, military caste which engineered the modernization and industrialization of their country as the means to national power.³⁹ The existence of a strong central government infused with imperial ambitions served in some respects to stimulate and facilitate the process; in other respects it operated as a decided drag; in still other respects it had little direct influence on what took place.

The truly signal contributions to economic growth which were made through the political mechanism were first to ward off foreign subjection and assure the nation's political unity and order; second, to clear away the whole complex of legal and political obstacles to freedom of ownership, occupation, and movement; and third, to carry through a series of architectural reforms in law, education, taxation, currency, etc., which created a setting favorable to the emergence of new forms of productive enterprise. In the realm of industrial development particularly, the government furnished more direct encouragements and even actual entrepreneurship during the earlier years. Yet its influences exerted here through the prewar decades were inconsistent and discriminatory in their total effect, so far as real economic growth was concerned.

While the Meiji state was absolutist in politics, it was not totalitarian. Its policies widened steadily the range of personal freedom and opportunity in economic life. Such opportunity remained closely circumscribed for most people, and freedom was all too often the freedom to be exploited by the moneylender and the landlord. On the other hand, the state never substituted political rewards and punishments for private incentives to material gains. It enlarged the sphere of private ownership rather than government collectivization. It replaced the harsh and oppressive personal rule of a feudal aristocracy with something which increasingly approached modern standards of constitutional rule by law. The Japanese adopted Western technology much more readily than ideas of personal freedom; the latter remain heavily qualified to this day. Probably, too, the dependence of one on the other is less unconditional in the twentieth century than in the pioneering days before 1850. Yet it is significant that the Industrial Revolution in Japan, as in most of the West, was generated by such innovations as the abolition of heritable servitude, legal equality before the law, free choice of occupation and residence, and the construction of a new framework of security and opportunity within which private enterprise could develop.

³⁹ For an interesting comparison, nevertheless, between Japan and China in this respect see Hu Shih, "The Modernization of China and Japan: A Comparative Study in Cultural Conflict," *China Quarterly*, V (Winter Number, Supplement, 1940), 773-780.

Notwithstanding other less constructive aspects of state policy, this framework made it possible to build a new national market for goods and capital, linked with the outside world through expanding trade. It encouraged that internal mobility of people among jobs and places which was so essential to economic growth and structural change. It provided a climate favorable to the cumulative advance of new investment and technical change, especially in nonagricultural pursuits. Other features of state encouragement and regulation reviewed earlier in this paper were important in their respective spheres, of course. No one would say of Japan, as of nineteenth-century Britain, that her industrial development "owed practically nothing to State aid." But where political action contributed to the expansion of Japan's productive powers and did not merely warp it in particular directions or redistribute its benefits among classes, it served mainly to hasten and facilitate a process the chief motive force of which lay elsewhere.

The case of Japan is nevertheless significant, perhaps unique in Asia, in that political and social leadership throughout this period of transition was exercised by certain dominant groups who remained firmly in the saddle and were technologically progressive on the whole. These groups maintained their ascendancy, accommodated their differences, and pursued their aims through a variety of social institutions and controls. Of these the political hierarchy was only one, although perhaps the most important.

Here, paradoxically, we may have the reason why direct state intervention in economic life was rather limited through most of the prewar period, judged by modern standards. Given the temper of Japan's leaders, their control over wealth, and the strength of the Japanese social fabric, it was unnecessary to rely on state coercion extensively to mobilize resources for industrialization. Moreover, while different elements of the ruling coalition, for example, the military and the *zaibatsu*, often had divergent interests, they found it possible for a long time to harmonize their differences in a political regime with limited economic responsibilities; and no popular movement arose with sufficient power to wrest control and impose a different pattern.

Commenting on this point, Robert E. Ward raises more explicitly "the question whether or not reasonably effective national economic planning and the satisfactory implementation of large-scale developmental programs require the same degree of overt positive state participation in Japan—or perhaps in any major Oriental society—that the achievement of comparable results would necessitate in a Western society." He continues:⁴⁰

Making due allowance for the imperfection of the following categories, is it still not possible, in a Japanese cultural context charac-

⁴⁰ Comments on this paper submitted to the Conference on Economic Growth in Selected Countries, April 25-27, 1952, sponsored by the Social Science Research Council.

terized by a relatively homogeneous and continuous ruling class, a tradition of collective action and responsibility and some general pragmatic agreement that industrialization and economic development are desirable, that such informal oligarchic solidarity would of itself prove capable of achieving many of the results reflected by Japan's present stage of economic development? Such societies perhaps have more "built-in social controls" than do more individualistically-structured ones. If so, this may somewhat explain the surprising moderation of the Japanese government in terms of formal participation in or the imposition of extensive controls on the national economy prior to the 1930's.

It may well have been these circumstances which made Japan as responsive as she was to the liberal principles of economic organization current in the nineteenth-century West and enabled the system of private enterprise to prevail in such large degree for half a century. Significantly it was only as internal tensions mounted after 1925, and as international tensions gathered throughout the world, that the state moved increasingly to take over direct control and management of the Japanese economy.

How far these circumstances prevail elsewhere in Asia today—or in postwar Japan itself—is less clear.

As regards capital formation, for example, it may be doubted whether private initiative can do the job, or will be allowed to do it in anything like the same degree. Many of the peoples of Asia are developing a set of social expectations and immediate demands such that they will probably be unwilling to tolerate the great inequalities of private property and income so patiently borne by the Japanese. Equally important, where income continues to be as unequally distributed as it is, say in the Philippines, there is little evidence that the well-to-do class is disposed so largely as it was in prewar Japan to save and invest its money in the creating of new capital assets for productive enterprise.⁴¹

A greater spirit of egalitarianism among the people and a lack of entrepreneurial spirit among the owning class, where they prevail, will impel greater reliance on the state to mobilize capital and assume the risks and responsibilities of economic development, if it is to take place on any scale. Also, the tradition of private enterprise is greatly weakened in the West, where it has not been discarded altogether. Moreover, the internal cleavage and balance of forces in most countries of Asia is such as to create a more violent struggle for political power than in pre-1931 Japan. These factors accentuate still further the tendency to state intervention in economic life as a weapon for enforcing the will of the group which manages to seize control of the apparatus of government. Finally, international tension and insecurity in the East, no less than the West, work in the same direction.

⁴¹ See *The Economic Development of Japan*, chap. v.

So far as this holds true, the pattern of organization and entrepreneurship which produced such rapid economic growth in Japan can hardly be duplicated elsewhere in Asia. Whether this is for better or worse remains to be seen. From the standpoint of democracy and well-being, one would hope that some of the human costs and social injustices of the Japanese experience could be avoided. The dilemma appears to lie in the urgent demands being made on new, untried governments to produce large and impressive results, when these governments are so lacking in the very skills and standards of large-scale, responsible administration which the job requires. Perhaps, as in Japan, an initial period of state leadership and innovation in other parts of Asia will give way later to a larger measure of private enterprise, with some dependable demarcation of their respective spheres, once a pattern of order and growth is established. The tasks required of the state are crucial in all these countries. Yet it is hard to see how their economic development can be either rapid or sustained without releasing the spring of private initiative.

In any case the lessons of Japan are worth pondering. In two respects they are a warning. Unless population growth can be held in check, the mere increase in numbers will absorb much of the gains of development. And unless political institutions can be created to harness productive power to welfare goals, still more of the gain may be dissipated in war and conquest.

There is also a more constructive lesson in Japan's experience. It testifies to the potential of one Asiatic people at least for assimilating the skills necessary to economic progress, once a framework and atmosphere are provided to give full play to their productive energies. If the history of modern Japan argues for vigorous leadership in economic development, it is a tribute no less to the capacities of the common people.

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